The Unique Experience of Body Dissatisfaction in Males

Accurate Assessment and Outcomes

by

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ABSTRACT

The relations among internalization of the U.S. sociocultural standard of the ideal male body image, male body dissatisfaction, and behavioral and psychological outcomes of male body dissatisfaction were examined in a sample of 215 ethnically diverse male college students. Concerns regarding accurate assessment of male body dissatisfaction were addressed. Structural equation modeling was utilized to identify the relations among the internalization of the sociocultural ideal male body image, male body dissatisfaction (as measured by the Male Body Attitudes Scale, MBAS; Tylka, Bergeron, & Schwartz, 2005), and behavioral and psychological outcomes. Results demonstrated that internalization of specific aspects of the ideal male body (lean and muscular) predicted corresponding components of male body dissatisfaction (lean and muscular). Further, each component of male body dissatisfaction was related to distinct behavioral and psychological outcomes. Implications for clinical practice and research were discussed.
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Chapter 1

INTRODUCTION

The overarching purpose of the current study was to gain a better understanding of male body dissatisfaction based on the unique experiences of men. Specifically, the study examined relations between internalization of the United States sociocultural standard of the ideal male body, body dissatisfaction, and behavioral and psychological outcomes including: disordered eating, excessive exercise, excessive weightlifting, and depression. The primary focus of this study was on examining whether dual pathways of male body dissatisfaction (body fat dissatisfaction and muscle dissatisfaction) capture distinct outcomes. Additionally, this study assessed the internalization of sociocultural standards of the ideal male body image as a predictor of and male body dissatisfaction and behavioral and psychological outcomes. Finally, the study tested the mediation role of body dissatisfaction on the relation between internalization and negative outcomes. The end goal of the study was to expand the literature on male body dissatisfaction and provide a clearer picture of outcomes of male body dissatisfaction.

Body image has been linked with positive and negative behavioral, cognitive, and affective outcomes. As such, it has the potential to influence significantly a person’s quality of life. The term body image refers broadly to any assessment of one’s body. Body image has been conceptualized as a multidimensional construct that refers to how individuals think, feel, and behave in relation to their internal representation of their external physical appearance (Pruzinsky & Cash, 2002).

Body dissatisfaction is one salient component of body image that has received much attention in the literature. Body dissatisfaction is conceptualized as a negative,
subjective, evaluative appraisal of one’s overall physical appearance (Thompson, 2004). Body image concerns are often seen on a continuum of satisfaction and dissatisfaction with physical appearance (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Where a person falls on this continuum impacts how he or she feels and behaves. Negative outcomes such as alcohol abuse (Raevuori, Kaeski-Rahkonen, Buli, Rose, Riissanen, & Kaprio, 2006), depression (Bergeron & Tylka, 2007; Choate, 2005; Ganem, de Heer & Morera, 2009; McCready & Sasse, 2000; Nieri, Kulis, Keith, & Hurdle, 2005; Olivardia, Pope, Borowiecki, & Cohane, 2004), poor self-esteem (Davison & McCabe, 2005; Ganem et al.; Olivardia et al.), and eating pathology (Blashill, 2010; Cafri, Thompson, Ricciardelli, McCabe, Smolak, & Yesalis, 2005; Heywood & McCabe, 2006; Olivardia et al.; Tylka, Bergeron, & Schwartz, 2005) are associated with the dissatisfied end of the continuum. Historically, the majority of body image research has focused predominantly on women, the thin ideal, and eating disturbances (Andersen, Cohn, & Holbrook, 2000; Frederick, et al., 2007; McCabe & Ricciardelli, 2004; Pope, Phillips, & Olivardia, 2000; Rodin, Silberstein, & Striegel-Moore, 1985; Thompson et al. 1999). Researchers have noted that, compared to the wealth of female body dissatisfaction literature, research on male body dissatisfaction is limited (Grammas & Schwartz, 2009; Olivardia et al.). However, over the past three decades, researchers have begun to provide evidence that men also experience body dissatisfaction (Cohane & Pope, 2001; Drewnoski & Yee, 1987; Frederick et al., 2007; Gray & Ginsberg, 2007; McCabe & Ricciardelli, 2004; Tiggemann, Martins, & Kirkbride, 2007), are negatively influenced by societal standards of the ideal male body image (Giles & Close, 2008; Grammas & Schwartz, 2009; Mishkind, Rodin, Silberstein, & Striegel-Moore, 1986; Morry & Staska, 2001), and
experience negative outcomes associated with body dissatisfaction (Cafri & Thompson, 2004; Ganem de Heer, & Morera, 2009; McCreary & Sasse, 2000; Pope et al.).

As the literature on male body dissatisfaction grows and researchers evaluate the studies, a significant concern has emerged regarding the use of accurate assessments to capture the unique male experience. Frequently, findings regarding prevalence, predictors, and outcomes of body dissatisfaction among males are based on measures that do not fully encapsulate male concerns (McCabe & Ricciardelli, 2004; Tylka et al., 2005). Two assessment-related issues have emerged: Focus of assessment and type of assessment (Cafri & Thompson, 2004; Cafri & Thompson, 2007; Cafri, van den Berg, & Brannick, 2010; Cohane & Pope, 2001; Grogan, 2008; McCabe & Ricciardelli, 2004).

Focus issues relate to the focus of the research. For women, the focus of research has been on body fat dissatisfaction and the subsequent pursuit of thinness (Pope et al., 2000). However for men, studies have shown that the nature and focus of body dissatisfaction differs from that of women. Specifically, studies have revealed that male body dissatisfaction consists of body fat dissatisfaction and muscle dissatisfaction (Cohane & Pope, 2001; McCabe & Ricciardelli, 2004; Ridgeway & Tylka, 2005). Because researchers originally relied on measures that were created for use among women and the pursuit of thinness (McCabe & Ricciardelli, 2004), there is limited research that assesses both body fat dissatisfaction and muscle dissatisfaction among men (Ridgeway & Tylka, 2005).

The second area of concern, regarding type of assessment, is related to the specific measures used to assess body dissatisfaction. Silhouette or Likert-type rating scales are typically used to measure body dissatisfaction (Cafri et al., 2010). Silhouette
measures that typically present nine scaled silhouette figures ranging from thin to obese are used frequently in male body image research (Cafri & Thompson, 2004). However, researchers have highlighted psychometric problems (e.g., scale coarseness, test-retest reliability concerns, and method of presentation) with silhouette measures (Cafri & Thompson, 2004; Cafri & Thompson, 2007; Cafri et al., 2010; Grogan, 2008) and have recommended the use of Likert-type-rating scales (Cafri & Thompson, 2004). The majority of researchers have not adhered to this recommendation.

Ultimately, it seems that many of the conclusions drawn about male body dissatisfaction are based on measures that do not assess both facets of male body dissatisfaction and/or rely on psychometrically less desirable measures. Based on these concerns, it was argued that many of the conclusions drawn about male body dissatisfaction need to be reexamined. The Male Body Attitudes Scale (MBAS; Tylka et al., 2005) has been identified as the only Likert-type rating measure that assesses both dimensions of body dissatisfaction (Cafri & Thompson, 2007; Blashill, 2010). To date, only three studies that have utilized this measure when assessing body dissatisfaction (Blashill, 2010; Grammas & Schwartz, 2009; Bergeron & Tylka, 2007). Results from these studies indicated that body dissatisfaction is predicted by internalization of the sociocultural ideal of male body image (Grammas & Schwartz, 2009) and that muscle dissatisfaction and body fat dissatisfaction lead to distinct behavioral and psychological outcomes (Bergeron & Tylka, 2007; Blashill, 2010).

Additionally, the current study examined the assessment of the internalization of sociocultural ideal male body image. Researchers have demonstrated that the nature of male body dissatisfaction seems to mirror the socioculturally prescribed ideal of male
According to the sociocultural model, societal ideals of attractiveness are conveyed through numerous sociocultural channels. These ideals are internalized by the individual, used as a basis of self-assessment, and impact body satisfaction or dissatisfaction (Tiggerman, 2011). The U.S. sociocultural ideal male body is lean and muscular (Pope et al., 2000). Providing evidence to support sociocultural theory, men report being dissatisfied with their leanness and muscularity (McCabe & Ricciardelli, 2004). The SATAQ-Internalization subscale (Heinberg, Thompson, & Stromer, 1995) is a widely used measure to assess the relation between internalization and body dissatisfaction. Similar to many of the male body dissatisfaction measures, the SATAQ-I fails to assess accurately and distinctly the internalization of both foci. The measure was originally created to assess female internalization of the thin ideal (Heinberg et al., 1995) and was later modified for use with men (Morry & Staska, 2001). The modification simply involved replacing the term “muscular/fit” for “thin” and “body builder” for “swimsuit model” (Morry & Staska, 2001). This modification leads to vague items. The current study further modified the measure so that it distinctly assesses the dual nature of the sociocultural ideal male body. The modification process will be discussed in the next chapter.

In summary, the current study utilized the MBAS (Tylka et al., 2005) to assess male body dissatisfaction as it related to the internalization of the sociocultural ideal male image and body dissatisfaction outcomes including: Anorexia, bulimia, exercise dependence, weight lifting dependence, and depression. These specific outcomes, which have been previously studied among men and women, were chosen based on the inconsistent findings presented in the literature. Additionally, these outcomes were
selected because of their potentially negative effects on physical and mental health. Structural equation modeling was used to analyze the relations among the variables.

To date, no study in the literature has used structural equation modeling to assess the relations among the internalization of the sociocultural ideal male body image, body dissatisfaction as measured by body fat dissatisfaction and muscle dissatisfaction, and these specific outcomes of body dissatisfaction. This was the first study to do so.

In the following chapter, a brief review of the female body dissatisfaction literature is provided. The majority of the chapter focuses on an extensive review of male body dissatisfaction literature. Additionally, the research questions and hypotheses are provided in chapter two. Chapter three focuses on methods including: The sample, measures, procedures, and analysis. Chapter four details the results of the study. Chapter five discusses results, clinical implications, limitations, and recommendations for future research.
Chapter 2

REVIEW OF THE LITERATURE

This chapter begins by examining the research on female body dissatisfaction. In order to distinguish the unique aspects of male body dissatisfaction, one must have a basic understanding of the female experience as most of the literature on men is an extension of the literature pertaining to women. Specifically, this review of the female body dissatisfaction literature briefly provides information on the prevalence, sociocultural influence on, and outcomes of female body dissatisfaction.

The majority of the rest of the chapter centers on male body dissatisfaction. Specifically, this review highlights the focus and types of assessment currently used in body dissatisfaction research among men. The review of the literature begins with a discussion of the nature and subsequent assessment foci of male dissatisfaction. Outcomes of male body dissatisfaction as they relate to each focus of assessment are discussed. Concerns with the findings are raised and addressed.

Next, the review addressed the concern about the type of assessment used in examining male body dissatisfaction. Silhouette and Likert-type ratings scales are the most widely used forms of assessment in body dissatisfaction research (Cafri & Thompson, 2004). Benefits and limitations of these types of measures are discussed. Outcomes of studies are categorized based on type of measure used. A case was made that the most accurate results are those that come from studies that use Likert-type-rating scales to assess both body fat and muscle dissatisfaction. Specifically, the utility of the MBAS (Tylka et al., 2005) was detailed.
Next, the internalization of the sociocultural ideal male body dissatisfaction was discussed. Specifically, the utility of the current modified version of the internalization subscale of the SATAQ (Heinberg et al., 1995) was evaluated. A case was made for additional modification of the internalization scale to reflect better the dual nature of male body dissatisfaction. Finally, research questions, hypotheses, and a model for the study are presented.

**Body Dissatisfaction Among Females**

Body dissatisfaction is highly prevalent among women. Research has shown that body dissatisfaction has become a normal part of the female experience among clinical and non-clinical female samples (Mintz & Betz, 1986; Striegel-Moore, Silberstein, French & Rodin 1986). A recent study examining the prevalence of body image dissatisfaction among girls found that 39% of nine-year-olds and 38% of ten-year-olds reported body dissatisfaction (DeLeel, Hughes, Miller, Hipwell, & Theodore, 2009). Body dissatisfaction continues for women throughout their life span (Tiggemann & Lynch, 2001).

Extensive research has focused on predictors of body dissatisfaction in women. Sociocultural influences, in particular exposure to, awareness, and internalization of the sociocultural standard of female beauty, have been highly studied among heterogeneous samples of women and found to predict body dissatisfaction (Choate, 2005; Cusumano & Thompson, 1997; Poloskov & Tracey, 2013; Streigel-Moore et al., 1986). According to social comparison theory, people possess a drive for self-evaluation (Festinger, 1954). In order to make these evaluations, a person compares oneself to others. They evaluate characteristics that they deem of personal or social importance. Social comparison can be
downward (i.e. comparing oneself to others perceived as inferior), or upward (i.e. comparing oneself to others perceived as superior), or a person can compare himself or herself to another individual perceived to be similar. A person’s self-evaluation strongly depends on the target for comparison.

In conjunction with social comparison theory, researchers have looked to sociocultural theory for understanding predictors of female body dissatisfaction. According to sociocultural theory, culture defines the standards for comparison (Jackson, 2002). In regards to body image, female body images portrayed predominantly through mass media represent the ideal or comparison target. The images portrayed are impossibly thin (McKinney, 2001; Mussell, Binford, & Fulkerson, 2000; Perez, Voelz, Pettit, & Joiner, 2002; Rodin, 1984).

Based on social comparison and sociocultural frameworks, researchers have examined the relations among exposure to, awareness, and internalization of sociocultural standards of the ideal female body image, and body dissatisfaction among women. Exposure to the ideal image happens when individuals are presented with images or messages conveying the ideal body image. Awareness occurs when an individual is cognizant that the message conveyed represents the ideal. Internalization refers to the process by which the individual adopts the cultural standard as a way to evaluate oneself (Heinberg et al., 1995). Numerous studies have found correlations between exposure to and awareness of images of the ideal female body and body dissatisfaction among women (Dalley, Buunk, & Umit, 2009; Grabe, Ward, & Hyde, 2008). However, it is internalization of the cultural standard of the ideal body image that has the strongest relation to body dissatisfaction among women (Choate, 2005; Cusumano & Thompson,
Moreover, researchers have found that internalization is a causal predictor of body dissatisfaction among women (Stice, Schupak-Neuberg, Shaw, & Stein, 1994).

Scholars have also demonstrated a relation between internalization of the sociocultural female ideal and negative behavioral and psychological outcomes including: anorexia and bulimia (Cashel, Cunningham, Landeros, Cokley, & Muhammad, 2003; Heingberg et al, 1995), weight loss strategies, (McCabe, Ricciardelli, & James, 2007), substance use (Kumpfer, Smith, & Summerhays, 2008), and depression (Petrie, Greenleaf, & Martin, 2010).

Additionally, female body dissatisfaction has been tied to numerous negative outcomes. For example, a significant amount of research on body dissatisfaction among women focuses on its link to clinically diagnosable eating disorders (Stice, 2001; Stice & Shaw, 2002; Thompson, 1996; Thompson & Smolak, 2001), disordered eating (Brennan & Petrie, 2008), depression and anxiety (Mable, Balance, & Galgan, 1986; Mintz & Betz, 1986), poor self-esteem (Davison & McCabe, 2005; Mable et al., 1986; Mirza, Davis, & Yanokvski, 2005), substance use (Nieri et al., 2005), social phobia or social evaluative anxiety (Cash, Theriault, & Milkewicz, 1998; McClintock & Evans, 2001), and externalizing behaviors (ter Bogt et al., 2006).

In sum, research shows that, among women, internalization of the sociocultural female ideal predicts body dissatisfaction and negative outcomes. Additionally, body dissatisfaction predicts negative outcomes. Some theorists have hypothesized that the relation between internalization of the female ideal and negative outcomes (e.g. disordered eating) is mediated by body dissatisfaction (Stice, 1994). The current study
examined whether body dissatisfaction mediated the relations between internalization of the sociocultural male ideal and negative behavioral and psychological outcomes.

**Body Dissatisfaction in Males**

Compared to research among women, there has been a disparate amount of research among males (Olivardia et al., 2004; Pope et al., 2000). Scholars theorize that this lack of attention to male body image is attributed to the, now defunct but previously widely held, assumption that body image concerns and body dissatisfaction only afflict women (Mishkind et al., 1986; Pope et al., 2000). Researchers have noted that originally it was assumed that men were not at risk for problems related to body image (Grogan, 2008; McCabe & Ricciardelli, 2004; Schooler & Ward, 2006). However, studies from over the past three decades provide evidence that men do experience body dissatisfaction (Cohane & Pope, 2001; Drewnowski & Yee, 1987; McCabe & Ricciardelli, 2004; McCreary & Sasse, 2000; Mintz & Betz, 1986; Mishkind et al., 1986; Olivardia et al.; Pope et al.; Tiggemann et al., 2007) and that body dissatisfaction among males is associated with significant risks including: increased alcohol use (Raevuori et al., 2006), eating disorders (Drewnowski & Yee, 1987; Cafri et al., 2005; Goldfield, Blouin, & Harper, 1998; Heywood & McCabe, 2006; Olivardia et al., 2004; Pope et al., 2000), excessive exercise (Chittester & Hausenblaus, 2009), excessive weight lifting (Hildebrandt, Langenbucher, & Schlundt, 2004; Litt & Dodge, 2008), anabolic steroid use (Cafri et al., 2005; McCreary & Sasse), and depression (McCreary & Sasse; Olivardia et al.).

As studies have revealed that men are also at risk, attention to male body image has slowly been increasing (Cafri & Thompson, 2004; Pope et al., 2000). From this
increasing attention to the male experience of body dissatisfaction, a concern has emerged regarding accurate assessment. A major area of concern has been the need to capture adequately and accurately the unique male experience of body dissatisfaction. Two assessment-related concerns have emerged: Focus of assessment and type of assessment.

**Focus of Male Body Dissatisfaction Assessments**

A key conclusion drawn from the research is that the nature and experience of body dissatisfaction qualitatively differs between males and females (Cohane & Pope, 2002; McCabe & Ricciardelli, 2004; Pope et al., 2000; Stanford & McCabe, 2002). Body dissatisfaction in females reflects a woman’s desire to be thin and lose weight, whereas body dissatisfaction in men seems to reflect a man’s desire to be both lean and muscular, which are not necessarily isomorphic (McCabe & Ricciardelli, 2004; Stanford & McCabe). Compared to the singular pathway for women, there appear to be two pathways or foci of male body dissatisfaction: Body fat dissatisfaction and muscle dissatisfaction (Bergeron & Tylka, 2007; Pope et al.; Ridgeway & Tylka, 2004). Based on these findings, it is important to assess both concerns about leanness and muscularity in assessing body image issues in men.

As previously discussed, the sociocultural ideal has been a significant component in defining and predicting female body dissatisfaction (Choate, 2005). The dissatisfaction women report appears to mirror the female sociocultural ideal body image. In other words, the sociocultural female ideal is thin and women report body dissatisfaction with not being thin enough. In turn, assessment for female body
dissatisfaction focused on thinness (Cafri & Thompson, 2004; McCabe & Ricciardelli, 2004).

As an indicator of the elements of male body dissatisfaction, one might turn to the sociocultural ideal male image. Cultural norms for the ideal male body type are becoming increasingly more muscular and lean (Cafri & Thompson, 2004; Leit, Gray & Pope, 2002; McCreary & Sasse, 2000) and increasingly more unattainable (Pope et al., 2000). Studies of magazines and children’s toy action figures provide telling information on the standard ideal male body image.

Frederick, Fessler, and Haselton (2005) examined the content of male and female magazines paying particular attention to representations of male images. Magazines assessed included: *Cosmopolitan, Men's Health, Men's Fitness*, and *Muscle & Fitness*. They found that compared to the ideal male image presented in female magazines, the ideal male body presented in men’s magazines was more muscular. Further, in a 2005 content analysis of *Men's Health and Fitness* magazines, Labre found that male images were more likely characterized as low in body fat and very muscular. Additionally, the content of the articles and ads further emphasized leanness and muscularity. Leit, Pope, and Gray (2001) analyzed the images of Playgirl Centerfolds from 1973 to 1997. They found that the average centerfold lost approximately 12 lbs of fat while putting on 27 lbs of muscle.

Providing further information regarding the sociocultural ideal male body image, Pope et al. (2000) examined the changes in the bodies of action figure toys such as GI Joe and Star Wars. They found that over a 30-year span, the figures had increased significantly in muscularity and decreased in body fat. Further, the muscularity of the
toys far exceeded the limits of what a human could actually attain. For example, they considered the G.I. Joe Extreme of the mid-1990s. Were this figure to be actual human size, his biceps would be 27 inches and his chest 55 inches. Star Wars, Batman, Iron Man, and Wolverine as reflections of cultural ideals also displayed leanness and exaggerated muscularity (Pope et al., 2000).

In addition to the magazine ads, centerfolds and action figures, professional wrestlers and male movie stars have also increased in muscularity and decreased in body fat over the years (Pope et al., 2000). Considering these overall findings, it seems that the sociocultural ideal male body is muscular and lean.

In order to assess the components of male body dissatisfaction, Ridgeway and Tylka (2005) conducted a qualitative study on perceptions of the ideal male body image among male college students. They noted that prior qualitative research on male body dissatisfaction focused predominantly on muscle dissatisfaction and confirmed that muscle dissatisfaction is a major preoccupation among men. However, Ridgeway and Tylka (2005) highlighted concerns beyond attitudes towards muscularity.

Thirty male college students ranging in age from 16 to 51 years old with an average age of 21 participated in Ridgeway and Tylka’s 2005 study. Fifty percent of the participants were college freshman and the majority (83%) were White. Participants were asked questions regarding their general attitude towards body shape and composition. Specifically, they were queried about their perceptions of the overall body shape that men in general desire and do not desire, specific body areas of concern for men in general, and body modification techniques that men in general utilize to improve body shape. The same questions were asked with specific regard to what the participants
personally desired for their body shape and composition, their body areas of concern, and their personal techniques for body modification.

The questions were administered via questionnaire format as opposed to an interview administration. The authors rationalized that men would be more likely to disclose their genuine perceptions if their answers were anonymous, not tape recorded, and allowed to be submitted privately. As such, all participants were given an open-ended questionnaire (Ridgeway & Tylka, 2005). Their responses were analyzed via the Consensual Qualitative Research method that requires rater agreement between a team of judges. Judges for this study were two female psychology undergraduate students, a female associate professor, and a male professor in developmental psychology.

All 30 of the participants indicated that they believed men in general desire a muscular physique. However, for their personal preferences, all 30 male participants indicated a desire for muscularity and leanness. Some also expressed a personal desire for height. Regarding particular body areas of concern, men reported a preference for large, defined and strong arms, broad chest and shoulders, a large and defined back, large upper legs and calves, and reduced stomach fat (Ridgeway & Tylka, 2005). Additionally, all participants indicated that they believed that men in general use weightlifting as a means to improve their body. While height was noted by some participants as an element of dissatisfaction, results from this qualitative study revealed that muscle and body fat are the predominant components of men’s body image dissatisfaction.

Although the Ridgeway and Tylka (2005) study demonstrated that men experience both body fat and muscle dissatisfaction, researchers who have conducted reviews of the literature (Cohane & Pope, 2001; McCabe & Ricciardelli, 2004) and
empirical research on male body dissatisfaction (Blashill, 2010; Bergeron & Tylka, 2007; McCreary & Sasse, 2000) have noted that much of the male body dissatisfaction research either focuses solely on muscle dissatisfaction or solely on body fat dissatisfaction, but not both. In a 2001 review of the literature, Cohane and Pope analyzed 17 studies published between 1967 and 2000 that assessed body image in boys. Not a single study included assessment of both foci. The authors urged future researchers to assess the separate indices of body fat and muscularity more carefully (Cohane & Pope). Three years later, based on a separate review of the literature on male body dissatisfaction across the life span, McCabe and Ricciardelli (2004) provided the same recommendation: Assessments should focus on both body fat and muscle dissatisfaction. They highlighted that much of the research and assessment tools in male body dissatisfaction are focused on the female pursuit of the thin ideal applied to men. For example, they reported results from a 1996 study on weight and shape-related beliefs and behaviors conducted by Nowak, Spear, and Crawford. Results from this study revealed that 27% of the male participants wanted to lose weight. Nowak et al. (1996) interpreted these results as results of overall male body dissatisfaction. However, McCabe and Ricciardelli (2004) noted that the researchers only assessed a desire to lose weight but not a desire to gain weight or muscle.

Conversely, some research focuses solely on muscle dissatisfaction. In the past decade, a singular focus on muscularity has prevailed in the male body image research (Pope et al., 2000). As muscularity has been increasingly shown to be related to male body image, some researchers have turned a myopic focus to this specific component of male body dissatisfaction (Cafri & Thompson, 2004; Edwards & Launder, 2000;
Karazsia & Crowther, 2008; McCreary & Sasse, 2000; Morrison, Morrison, Hopkins, & Rowen, 2004; Raevuori et al., 2006; Ricciardelli & McCabe, 2004).

McCabe and Ricciardelli (2004) contend that studies that only focus on body fat dissatisfaction do not provide a complete picture of the male experience. The same can be said of studies that focus solely on muscle dissatisfaction. Measures need to be constructed that assess desires to gain weight, lose weight, and increase muscle (McCabe & Ricciardelli, 2004). In other words, assessments need to focus on both body fat and muscle.

To summarize, much of the current research on body dissatisfaction among males is incomplete. Either research is based on theories and utilizes measures that pertain to the female experience of body dissatisfaction and the female pursuit of thinness (Bottamini, 2006; Cafri & Thompson, 2004; Cohane & Pope, 2001; Edwards & Lauder, 2000; McCabe & Ricciardelli, 2004; Pope et al., 2000) or its focus is limited to muscle dissatisfaction. As such, some research with male samples focus on solely body fat dissatisfaction. Other research limits its focus to muscularity. Essentially, the problem with studies that purport to examine male body dissatisfaction but do not focus on both pathways (body fat dissatisfaction and muscle dissatisfaction) is that the results are incomplete. This is problematic when considering the negative physical and mental health outcomes. Consider the following findings regarding body dissatisfaction and outcomes.

**Studies that focus on body fat dissatisfaction only.** Studies that only assess body fat dissatisfaction have provided mixed results on whether or not men experience body dissatisfaction. For example, in their seminal 1987 study, Drewnowki and Yee used
silhouette measures to assess body dissatisfaction among 98 male and 128 female college students. Silhouette ranged from thin to fat. Results indicated that 40% of the men wanted to lose weight, while 45% of the men wanted to gain weight. Additionally, 50% of the “normal weight” men reported dissatisfaction with their bodies. Men cited exercise as a means of weight loss. Similar to these findings, Mishkind et al. (1986) found that 95% of male college students expressed body dissatisfaction. Again, using silhouette ratings, Mishkind et al. reported that 50% of men expressed a desire to lose weight and 50% of men indicated a desire gain weight. In a more recent study, Neighbor and Sobal (2007) found similar results. The purpose of their study was to examine the prevalence and magnitude of body dissatisfaction among university students. With a sample of 73 male and 237 female university students, participants rated silhouette figures ranging from very thin to very overweight. Again, results demonstrated that the majority of male participants were dissatisfied. Whereas in previous studies, participants expressed a mixed desire to gain and lose weight, the majority of the male participants in the Neighbor and Sobal study expressed a desire to increase weight. Beyond the ambiguity from the mixed results on whether men want to gain or lose weight, the problem with these findings is that none of the studies made a distinction between gaining body fat or muscle. Based the focus of the measures, it is not clear whether gaining weight meant gaining weight in general or specifically gaining muscle.

In contrast to the findings that men are dissatisfied with their bodies, Fallon and Razon (1985) reported that the men in their study were satisfied with their bodies. In this study silhouette scales ranging from thin to fat were used to assess 248 male and female college students’ body dissatisfaction. Results indicated that there was not a significant
discrepancy between men’s ideal body image and their perceived current body image. Based on this study, researchers could potentially falsely conclude that body dissatisfaction is not a problem for men. Perhaps if the study included satisfaction or dissatisfaction with musculature, it would have achieved different results regarding body dissatisfaction among men.

In reviewing the literature it appears that the majority of research that focuses on body fat dissatisfaction report mostly prevalence rates and differences between men and women. However, one study was identified that focused only on body fat dissatisfaction and outcomes of dissatisfaction. Ganem et al. (2009) examined body dissatisfaction as a predictor of mental health in Latino college students. A silhouette scale that presented images that ranged from emaciated to morbidly obese was presented to 66 male and 108 female college students. Outcome measures assessed life satisfaction, self-esteem, depression, and psychological well-being (e.g. anxiety, depressed mood, self-control, and general health). Among the males in the sample, body dissatisfaction, in particular the desire to be thinner, predicted a lower well-being score. However, body dissatisfaction was unrelated to depression, life satisfaction and self-esteem.

Overall, the results from body-fat focused studies are mixed. Findings indicate that men are both satisfied and dissatisfied with their bodies, want to gain or lose weight and that male body dissatisfaction is unrelated to depression, life satisfaction, or self-esteem.

**Studies that focus on muscle dissatisfaction only.** Research that focuses solely on muscle dissatisfaction has assessed the relations between body dissatisfaction and numerous outcomes. The majority of studies that focus on muscle dissatisfaction
examine the relation between the desire for muscularity and steroid use (Cafri et al., 2005). However, muscle dissatisfaction has also been examined as a predictor of weightlifting, excessive exercise, binge eating, bulimia, dietary restraint, self-esteem, depression, anxiety, and general psychological symptomology (Chiltester & Hausenblas, 2009; Hale, Roth, Delong, & Briggs, 2010; Litt & Dodge, 2008; McCreary & Sasse, 2000; Raevuori et al., 2006).

The most widely used to measure to assess muscle dissatisfaction is the Drive for Muscularity Scale (DMS; McCreary & Sasse, 2000). While this scale was created to assess the desire for muscularity, most researchers utilize it as a measure of overall body dissatisfaction among men (Cafri & Thompson, 2004; Hale et al., 2010; Litt & Dodge, 2008). The DMS is a 15-item Likert-type scale. The DMS consists of two subscales: A muscularity-oriented body image scale and a muscularity behavior scale. In their study to construct and validate the DMS, McCreary and Sasse (2000) found that muscle dissatisfaction was linked with binge eating without purging, weight training, anabolic steroid use, and use of other performance enhancing substances, depression, and low self-esteem among adolescent boys.

In a sample of 161 male college students, Litt and Dodge (2008) found that the muscularity behavior subscale of the DMS predicted weightlifting and use of performance enhancing substances while the muscle dissatisfaction attitude subscale did not predict either behavior. Similar to these findings, Hale et al. (2010) found that, of the two subscales, only the muscularity behavior subscale predicted exercise dependence among 146 adult male weightlifters. Researchers cite these studies as evidence of a link between male body dissatisfaction and exercise. However, based on the actual findings,
attitudes towards muscularity (in contrast to behaviors) are unrelated to exercise or weightlifting.

In contrast to these findings, Chiltester and Hausenblaus (2009) reported a lack of relation between muscle dissatisfaction and exercise behavior, weightlifting, and eating pathology (dietary restraint) among 113 male college students. However, exercise dependence and self-esteem were significantly related to muscle dissatisfaction. Greater muscle dissatisfaction predicted higher scores on the exercise dependence scale and lower self-esteem among the study’s participants.

Because these findings used two measures of exercise it should be noted that exercise dependence is distinct from exercise behavior. Exercise dependence, also known as excessive exercise, obligatory exercise, compulsive exercise, and exercise addiction, is a process that involves compensatory exercise despite negative physical and psychological outcomes (Ricciardelli & McCabe, 2004). Exercise behavior is strictly a behavior.

In analyzing the Chiltester and Hausenblaus (2009) findings, while it is clear that muscle dissatisfaction predicts excessive exercise and low self-esteem, it is not clear which subscale (behavior or attitudes) was related to the outcomes. Finally, Raevuori et al. (2006) used a single item related to muscle dissatisfaction to assess the relation between muscle dissatisfaction and psychological and behavioral outcomes among 1,245 adult Finnish men. Participants were asked if they would like to be more muscular. Response choices were on a six point scale ranging from “never” to “always.” Outcome variables included performance enhancing supplement use, bulimia, drive for thinness, physical activity, life satisfaction, illicit drug use, general psychological symptomatology,
alcohol use, and psychosomatic symptoms. Results indicated that greater muscle dissatisfaction was associated with increased general psychological symptomology, psychosomatic symptoms, alcohol use, bulimia, and drive for thinness and decreased life satisfaction. The concern with these results is that they are based on a single item measure of dissatisfaction that does not accurately represent the full construct of body dissatisfaction.

Overall, results are unclear regarding muscle dissatisfaction and psychological/behavioral outcomes. Some studies reveal that attitudes towards muscularity are unrelated to exercise behavior, weight lifting, and dieting (Hale et al., 2010; Litt & Dodge, 2008), while others demonstrate relations between muscle dissatisfaction and excessive exercise (Chiltester & Hausenblaas, 2009) and between muscle dissatisfaction and disordered eating (Raevuori et al., 2006). Clearly the results are mixed. The mixed findings appear to be a result of the sensitivity of the measure. Two studies utilized the attitude and behavior subscales of the DMS (Hale et al.; Litt & Dodge), one used the total score (Chiltester & Hausenblaas), and one study used a single item (Raevuori et al.). Based on these studies, it seems evident that conclusions drawn from studies that only assess muscle dissatisfaction are questionable.

**Studies that focus on both body fat and muscle dissatisfaction.** Studies that have assessed body fat and muscle dissatisfaction have provided evidence that men experience body dissatisfaction along the two pathways. Frederick et al. (2007) conducted four separate studies to investigate aspects of male body image. Three of the four studies were conducted in separate regions of the United States (Midwest, Northeast, and Southwest). The fourth study was conducted in Ghana and the Ukraine; results from
study four are not included in this review as these results do not pertain to U.S. samples. Frederick et al. utilized two separate silhouette measures (the Muscle Silhouette and the Body Fat Silhouette) created specifically for use in this four-part study. In study one, the measures were used to assess 68 midwestern college male students’ satisfaction with their current levels of muscle and body fat levels. Results indicated that 90% of the men wanted to be more muscular and 49% were dissatisfied with their body fat level. The majority of those dissatisfied with body fat level desired to be thinner. In study two, the same measures were used to assess satisfaction among 100 northeastern undergraduate males. Results indicated that 91% of the males wanted to be more muscular and approximately 34% of the men expressed dissatisfaction with their body fat level. Of those who expressed body fat dissatisfaction, 38% wanted to be thinner. Finally, results from study three, which investigated dissatisfaction among 56 southwestern undergraduate males revealed that 96% of the men wanted to be more muscular and 71% were dissatisfied with their level of body fat. Thirty-nine percent of those dissatisfied with their overall level of body fat desired to be thinner. Overall, for the U.S. samples, findings revealed that approximately 51-71% of U.S. men were dissatisfied with their body fat level and over 90% of U.S. undergraduate men wanted to be more muscular.

Tiggemann et al. (2007) also utilized silhouettes to examine body ideals and body dissatisfaction among 253 gay and heterosexual men. Their findings were similar to those in the Frederick et al. study. Specifically, over 80% of both gay and heterosexual males desired to be more muscular, and approximately 60% of both gay and heterosexual men desired to be thinner. The high rates of body fat and muscle dissatisfaction in these
studies indicate that both are salient components of male body dissatisfaction among heterogeneous samples of males.

While the research is clear that men experience both body fat and muscle dissatisfaction, results are less clear regarding the distinct outcomes of body fat dissatisfaction and muscle dissatisfaction among males. Some studies indicate that muscle dissatisfaction, but not body fat dissatisfaction, is predictive of psychological and behavioral outcomes (Cafri, Strauss, & Thompson, 2002; Hildebrandt et al., 2004; Olivardia et al., 2004). For example, Cafri et al. (2002) administered a silhouette measure assessing both body fat and muscle dissatisfaction to a sample of 60 male college students. Respondents reported both muscle and body fat dissatisfaction. Muscle dissatisfaction was linked with depression, self-esteem, and satisfaction with life, whereas body fat dissatisfaction was not significantly related to any of the outcome variables.

Using a silhouette measure of their own design that was purported to assess both elements of body dissatisfaction, Hildebrandt et al. (2004) found that muscle dissatisfaction and not body fat dissatisfaction was significantly linked to bulimia among 237 male weightlifters. Both muscle and body fat dissatisfaction were linked to weightlifting. Finally, Olivardia et al. (2004) used a silhouette measure to assess the relations among body dissatisfaction, self-esteem, depression, and eating disorder symptoms among 154 male college students. Men reported a desire for a body with 25 lbs more muscle and 8 lbs less fat than their current body. Results indicated that muscle dissatisfaction was related to depression and to bulimia. Body fat dissatisfaction, however, was not significantly related to either outcome. These studies, all of which
used silhouette measures, consistently reported significant associations between muscle
dissatisfaction and outcomes (depression, bulimia, and satisfaction with life).
Furthermore, these studies indicated no relation between body fat dissatisfaction and
outcomes. Based on these studies it would appear that male body dissatisfaction and
negative consequences of male body dissatisfaction are a function of muscle
dissatisfaction.

Some studies that assess the dual pathways of male body dissatisfaction have
found different results. For example, in a study that specifically examined the dual
pathways hypothesis, Jones and Crawford (2005) demonstrated that both paths are
significant. The Drive for Muscularity Scale (DMS; McCreary & Sasses, 2000) was used
as a measure of muscle dissatisfaction, the Drive for Thinness subscale of the Eating
Disorder Inventory (EDI; Garner, Olmstead & Polivy, 1983) was used as a measure of
body fat dissatisfaction, and the EDI Body Dissatisfaction subscale was used as a
measure of overall body dissatisfaction. Structural equation modeling was used to
analyze the model. Results indicated that both the scores on the DMS and the EDI
Thinness scales significantly predicted scores on the EDI Body Dissatisfaction scale.
Muscle and body fat dissatisfaction were significant and unique contributors to overall
body dissatisfaction.

There are two main problems with the Jones and Crawford (2005) findings. First,
while they utilized a measure that specifically assessed muscle dissatisfaction (DMS;
McCreary & Sasse, 2000), the measure they used to represent male body fat
dissatisfaction was not reflective of unique male body image concerns. The Drive for
Thinness subscale was designed to assess the female pursuit of extreme thinness. A
sample item is “I am terrified of gaining weight” (Garner et al., 1983). However, researchers have demonstrated that body fat dissatisfaction in men does not necessarily equate to desire for thinness (Frederick et al., 2007). Some men have reported wanting to gain weight (Neighbor & Sobal, 2007). As such, the measure fails to assess completely the male experience of body fat dissatisfaction.

Additionally, the use of the EDI Body Dissatisfaction subscale as the indicator of overall male body dissatisfaction is problematic. This subscale was created to represent the unique issues related to female body dissatisfaction (Garner et al., 1983). Specifically, the measure asks participants to indicate how much they agree or disagree that specific body parts are too large. Jones and Crawford (2005) replaced items evaluating satisfaction with “hips and thighs” with items that assess “chest and biceps.” An example of a modified item would be “I think that my biceps are too large.” Responses ranged on a six point scale from “never” to “always” with higher scores indicating greater dissatisfaction. This scoring protocol does not seem appropriate for men. For example, according to original scoring protocol, men who “always” believe their biceps are too large would have greater dissatisfaction. However, research consistently demonstrates that muscle dissatisfaction is relate to a desire for increased muscularity not a dissatisfaction with muscle that are too large (Pope et al., 2000). As this measure assesses dissatisfaction with “largeness,” it does not adequately represent the two pathways to male body dissatisfaction. In sum, the authors used an inappropriate measure of male body fat dissatisfaction to arrive at a unidimensional, inappropriate measure of overall male body dissatisfaction. Thus the findings from this study that
Other studies that focus on both pathways have stressed the predictive utility of body fat dissatisfaction over muscle dissatisfaction (Bergeron & Tylka, 2007; Blashill, 2010; Heywood & McCabe, 2006). Heywood and McCabe (2006) used the Body Image Concern Scale (Ricciardelli & McCabe, 2002), a Likert-type measure that assesses satisfaction with both body fat and muscle, on a subsample of 93 men aged 18 to 25. They examined body dissatisfaction as a predictor of numerous behavior and psychological outcomes including: Change strategies to increase or decrease weight, or increase muscle, binge eating, use of food supplements, drive for thinness, bulimia, excessive exercise, and negative affect. Results indicated that dissatisfaction with body fat was associated with attempts to lose weight, dietary restraint, and bulimia. Muscle dissatisfaction was unrelated to any of these variables.

Bergeron and Tylka (2007) also found evidence for the distinction between muscle and body fat dissatisfaction. The expressed purpose of their study was to provide evidence that male body dissatisfaction is not solely reflective of the drive for muscularity. As such, their study compared the predictive utility of a measure that assesses both body fat and muscle dissatisfaction with two measures that only assessed muscle dissatisfaction on numerous psychological outcomes. The Male Body Attitudes Scale (MBAS; Tylka et al., 2005) was used to measure body fat and muscle dissatisfaction. The Drive for Muscularity Scale (DMS; McCreary & Sasse, 2000) and the Drive for Muscularity Attitudes Questionnaire (DMAQ; Morrison, Morrison, Hopkins, & Rowan, 2004) were used to assess muscle dissatisfaction. Bergeron and
Tylka highlighted the fact that the muscle dissatisfaction subscale of the MBAS was theoretically similar to the DMS and DMAQ in that they all aim to assess muscle dissatisfaction. However, they noted that the MBAS differs in that it assesses a greater number of male specific body areas of concern. The DMS consists of two subscales that assess attitudes (Muscularity Body Image subscale) and behaviors (Muscularity Behaviors subscale). Psychological outcome variables included: Self-esteem (as measured by the Rosenberg Self-Esteem Scale, RSE; Rosenberg, 1965), general psychological symptomatology (General Health Questionnaire-28, GHQ-28, Goldberg & Hiller, 1979), depression (The Center for Epidemiological Studies-Depression Scale, CES-D; Radloff, 1977), proactive coping (Proactive Coping Inventory, PCI; Greenglass, Schwartz, & Taubert, 1999), and psychological hardiness (the Psychological Hardiness Scale, Short Form, PHS-SF; Betz & Campbell, 2003). Three hundred sixty-eight male college students completed the questionnaire packet. Hierarchical multiple regression was used to analyze whether the MBAS predicted variance above and beyond the variance accounted for by the DMS and DMAQ (Bergeron & Tylka). Results indicated that only assessing muscularity dissatisfaction (without including body fat dissatisfaction) did not fully capture all psychological outcomes related to body dissatisfaction.

There were numerous findings in the study. The authors found that dissatisfaction with body fat predicted unique variance beyond that predicted by the muscle dissatisfaction only, on general psychological distress and self-esteem. Body fat dissatisfaction predicted incremental variance on depression and psychological hardiness. The muscularity subscale of the MBAS predicted unique variance beyond that predicted by the DMS or DMAQ muscularity scales on measures of self-esteem and proactive
coping. Based on these findings, there is evidence to support the assessment of both body fat and muscle dissatisfaction in evaluating men’s overall body dissatisfaction.

Blashill (2010) also provided support for the assessment of both pathways to male body dissatisfaction. The purpose of the Blashill study was to examine the unique predictive utility of the different components of male body dissatisfaction on psychological outcomes including depression, eating restraint, eating concerns, and social sensitivity. The MBAS (Tylka et al., 2005) was used to measure body dissatisfaction. Two hundred twenty-eight gay adult males participated in the study. Hierarchical multiple regression was used to analyze the data. Results provided evidence that muscle dissatisfaction predicted depression and that body fat dissatisfaction predicted unique variance in depression beyond that accounted for by muscle dissatisfaction. Similar results were found for the relations among muscle dissatisfaction, body fat dissatisfaction, and social sensitivity. Results regarding eating pathology indicated that only body fat dissatisfaction significantly predicted eating restraint and eating concerns. Based on the findings from this study it appears that body fat and muscle dissatisfaction are both significant predictors of psychological outcomes. However, body fat dissatisfaction seems to be related to more outcome variables.

Based on the findings reviewed in this section, there appears to be evidence to support the dual path assessment of body dissatisfaction. What is unclear is whether muscle or body fat dissatisfaction predict unique outcomes, and which outcomes they uniquely predict. For example, some studies indicate that muscular dissatisfaction (not body fat) predicts bulimia and depression (Cafri et al., 2002; Olivardia et al., 2004;
Hildebrandt et al., 2004) whereas other studies report the opposite (Bergeron & Tylka, 2007; Blashill, 2010).

**Studies that do not focus on body fat or muscle dissatisfaction.** It should be noted that there exists other studies that purport to assess male body dissatisfaction and outcomes of male body dissatisfaction. These studies have linked male body dissatisfaction to numerous psychological and behavioral outcomes including: anabolic steroid use, binge eating (Moore, 1990), bulimia and dieting (Blouin & Goldfield, 1995), disordered eating (Keel, Fulkerson, & Leon, 1997), exercise (Furnham & Calnan, 1998), self-esteem, depression, and sexual function (Davison & McCabe, 2005), and social anxiety (Cash, Theriault, & Mikewicz Annis, 2004). However, in line with Cafri and Thompson’s (2007) methodology review, studies that did not specifically address body fat, muscularity or both were not included in the current review. Cafri and Thompson point out that there exist many measures of body dissatisfaction but some measures are too generic or assess body image as it relates to eating disorders in women. For example, the Appearance Evaluation subscale of the Multidimensional Body-Self Relations Questionnaire (MBSRQ-AE; Brown, Cash, & Mikulka, 1990), originally designed to assess a woman’s satisfaction or dissatisfaction with her overall appearance is frequently used on male samples (Cafri & Thompson, 2004). As the focus of MBSRQ-AE is on the overall desire for a thin appearance, it is not an adequate or appropriate measure of the male experience of body dissatisfaction. Thus they are not adequate or appropriate measures for the male experience.

**Summary of the literature regarding different foci.** Several conclusions can be drawn about studies with each type of focus (body fat dissatisfaction only, muscle
dissatisfaction only, or body fat and muscle dissatisfaction). Studies that focus solely on body fat dissatisfaction seem to be assess mainly whether or not men experience dissatisfaction (Drewnowski & Yee, 1987; Fallon & Rozin, 1985; Mishkind et al., 1986). When studies with this singular focus are used to predict outcomes, results indicate that body fat dissatisfaction is unrelated to depression or life satisfaction but does predict psychological symptomatology.

Studies that assess muscle dissatisfaction appear to move beyond assessing whether or not men experience body dissatisfaction to assess outcomes of dissatisfaction. Of the literature currently reviewed, results indicated that muscle dissatisfaction is linked with anabolic steroid use, binge eating without purging, bulimia, depression, drive for thinness (anorexia), excessive exercise, psychological symptomatology, psychosomatic symptoms, and weight lifting. The studies that provided these results have mainly used the Drive for Muscularity Scale (McCreary & Sasse, 2000). One study found that muscle dissatisfaction (as measured by a Likert-type scale) did not predict dietary restraint or exercise behavior. Based on these results, it appears that muscle dissatisfaction predicts a number of psychological and behavioral outcomes.

Overall, among studies that used dual foci measures to assess male body dissatisfaction, results were inconsistent. Some studies indicated that both body fat and muscle dissatisfaction were significant predictors of depression, psychological symptomatology, psychological hardiness, and self-esteem (Bergeron & Tylka, 2007; Blashill, 2010). Other studies found that muscle dissatisfaction (and not body fat dissatisfaction) was significantly related to depression and eating pathology (Cafri et al., 2002; Hildebrandt et al., 2004; Olivardia et al., 2004). Yet other studies indicated that it
is body fat dissatisfaction (not muscle dissatisfaction) that predicts eating pathology (Heywood & McCabe, 2006). Overall, results are unclear regarding which pathway is more predictive of specific outcomes.

Types of Male Body Dissatisfaction Assessment

A second concern that has emerged in the literature pertains to the type of measure used to assess male body dissatisfaction. Silhouette contour measures and Likert-type rating scales are predominantly used to assess men’s subjective level of satisfaction with their bodies (Cafri & Thompson, 2004; Cafri & Thompson, 2007). Of the two types of measures, silhouette measures have been used more frequently in research (Cafri & Thompson, 2004, 2007; Cohane & Pope, 2001). As such, the majority of the results regarding predictors and outcomes of body dissatisfaction are based on silhouette measure findings. Researchers have highlighted psychometric problems with silhouette measures (Cafri & Thompson, 2004; Cafri & Thompson, 2007; Cafri et al., 2010; Grogan, 2008) and have recommended the use of Likert-type rating measures over silhouette measures when a choice has to be made (Cafri & Thompson, 2007). Similar to the lack of adherence to the recommendation to assess both muscle and body fat dissatisfaction, the majority of researchers have not heeded the recommendation to select Likert-type measures. This means that much of the conclusions drawn about male body dissatisfaction are based on psychometrically questionable measures.

Silhouette measures. Participants are presented with silhouettes of body images ordered along dimensions of muscularity and body fat. Originally, images ranged from very thin to very fat and participants choose the image that best represented their own body and the image that best represented their ideal body. As scholars began to
understand the importance of muscularity in conceptualizing male body image concerns, new scales were created to incorporate assessments of both body fat and muscle dissatisfaction (Cafri & Thompson, 2007). Thus, participants also choose their current and ideal images regarding muscularity. The difference between the two scores (current and ideal) represents their overall body dissatisfaction level.

Psychometric issues have been raised regarding silhouette measures (Cafri & Thompson, 2004; Cafri & Thompson, 2007; Cafri et al., 2010; Grogan, 2008; McCabe & Ricciardelli, 2004). Concerns generally center on the use of difference scores (Cafri & Thompson, 2007; Cafri et al.). Body dissatisfaction is a continuous variable; information is lost when measuring it via a discrete scale (Cafri & Thompson; McCabe & Ricciardelli, 2004; Grogan, 2008). Perhaps this may explain the inconsistent findings in the literature reviewed. All of the studies using silhouette measures to assess body fat dissatisfaction failed to find significant results of body fat dissatisfaction on negative outcomes among men, where as studies that used other forms of assessment demonstrated a relation between body fat dissatisfaction and negative outcomes (Blashill, 2010).

Cafri and Thompson (2007) identified the current silhouette measures available that assess both pathways to body dissatisfaction. These include: The Somatomorphic Matrix (SM; Gruber, Pope, Borowiecki, & Cohane, 1999), the Somatomorphic Matrix Modification (SMM; Cafri & Thompson, 2004), and the Body Builder Image Grid (BIG-O; Hildebrandt et al., 2004). Psychometric problems have been identified with each of these measures. While the SM and the SMM have test-rest reliability issues (Cafri, Roehrig, & Thompson, 2004), the BIG-O uses figures that are “awkward and unrealistic,” which affect its validity (Cafri & Thompson, 2007, p. 113).
**Likert-type measures.** While there exist numerous Likert-type measures of body dissatisfaction, there exist few measures that have been designed based on the male experience. In a review of the male body dissatisfaction literature, Cafri and Thompson (2007) identified four subjective self-report male-based Likert-type measures of body image dissatisfaction including: The Swansea Muscularity Attitudes Questionnaire (SMAQ; Edwards & Launder, 2000), The Drive for Muscularity Scale (DMS; McCreary & Sasse, 2000), The Drive for Muscularity Attitudes Questionnaire (DMAQ; Morrison, Morrison, Hopkins, & Rowan, 2004), and the Male Body Attitudes Scale (MBAS; Tylka et al., 2005). All four scales measure dissatisfaction with muscularity; however, only one (the MBAS), also incorporates assessment of dissatisfaction with level of body fat. As such, this was the measure chosen to reflect body image dissatisfaction in the current study.

The Male Body Attitudes Scale (MBAS; Tylka et al., 2005) is a 29-item Likert-type rating scale that assesses both body fat dissatisfaction and muscle dissatisfaction. To date, it is the only Likert-type measure of male body dissatisfaction measure that exists that assesses both dimensions of body dissatisfaction (Cafri & Thompson, 2007; Blashill, 2010). The MBAS is comprised of three subscales, muscularity, body fat, and height. These subscales measure the participants’ dissatisfaction and preoccupation with specific elements of concern. Research utilizing the scale has revealed that body fat dissatisfaction is linked with depression and eating pathology and that muscle dissatisfaction is linked with depression and not eating pathology (Bergeron & Tylka, 2007; Blashill, 2010). There have only been two studies that have utilized this measure to assess outcomes.
The MBAS has also been used as an outcome variable. Grammas and Schwartz (2009) found that internalization of the ideal male body predicted body dissatisfaction (as measured by the MBAS). More studies using the MBAS are needed to validate these findings.

**Outcomes of Male Body Dissatisfaction**

To summarize, the majority of the male body dissatisfaction research utilizes measures that are not the strongest assessments of male body image. Frequently the measures used either: (1) focus solely on body fat dissatisfaction; (2) focus solely on muscle dissatisfaction and/or (3) use figural ratings to capture male body dissatisfaction. As a result, conclusions drawn about male body dissatisfaction and outcomes related to male body dissatisfaction may be incomplete. These assessment-related concerns have potentially negative repercussions for prevention of and interventions for behavioral and psychological problems connected with body dissatisfaction.

Among women, body dissatisfaction is considered the strongest predictor of eating disorder symptomatology (Polivy & Herman, 2002; Stice, 2002). However, results regarding the relations between male body dissatisfaction and eating pathology are mixed. Based on the current review, it appears that men are also dissatisfied with their bodies and report wanting to lose weight, gain weight, and/or gain muscle (Drewnowski & Yee, 1985; Frederick et al., 2007; McCreary & Sasse, 2000; Neighbor & Sobal, 2007; Olivardia et al., 2004; Pope et al., 2000; Tiggemann et al., 2007). What is unclear is how they go about achieving these desires.

**Anorexic Symptomology**. Some researchers have provided evidence for an association between dietary restriction and the desire to lose weight (Cafri et al., 2005;
Drewnowski & Yee, 1985; Pope et al., 2000). In a review of the literature, Cafri et al. (2005) noted that 12.5% to 26% of adolescent males in the studies reported dieting to lose weight. Researchers have reported that, regardless of sexual orientation, men who were dissatisfied with their level of body fat engaged in dietary constraint (Blashill, 2010; Heywood & McCabe, 2006). In a sample of 154 male college students aged 18-30 years old, Olivardia et al. (2004) found a significant correlation between men’s fat displeasure and their desire for thinness. In their book on male body dissatisfaction, Pope et al. (2000) highlighted that some men, who believe that they are not thin enough, engage in abnormal eating habits including compulsive dieting. They indicated that compulsive dieting may lead to anorexia. Goldfield et al. (1998) also warned of the risk for anorexia among men who engage in dieting to lose weight. Ousely et al. (2008) found that compared to men without an eating disorder diagnosis, men diagnosed with an eating disorder reported greater dissatisfaction with their body fat level.

Some researchers who studied the link between dietary constraint and muscularity reported a non-significant relation between the two variables (Chittester & Hausenblaus, 2009; Heywood & McCabe, 2006). McCreary and Sasse (2000) reported that muscle dissatisfaction (as measured by Drive for Muscularity Scale; McCreary & Sasse) was uncorrelated with the drive for thinness among 197 male and female high school students. However, Kelly et al. (2010) found a positive relation between drive for thinness and muscle dissatisfaction (as measured by DMS). Kelly et al. argued that desire for thinness and desire for muscularity may not be mutually exclusive. Olivardia et al. (2004) found a significant correlation between muscle dissatisfaction and the drive for thinness.
Bulimic Symptomology. Men may attempt to lose weight, gain weight or gain muscle via overeating, binge eating, or bingeing and purging. It is estimated that 10% to 20% of the people clinically diagnosed with bulimia are men and that 40% of the people clinically diagnosed with binge eating disorder are men (Weltzin et al., 2010). Further, Pope et al. (2000) reported that the binge eating rate among men is comparable to that in women. Beyond those clinically diagnosed with an eating disorder, there exists a wide spectrum of bulimic symptomatology. Some men who are dissatisfied with their body fat may engage in bulimic behaviors. Riccardelli and McCabe (2001) found that male adolescents who reported body fat dissatisfaction and a desire to be thinner endorsed bulimic behaviors including bingeing. Heywood and McCabe (2006) assessed the relations between body fat and muscle dissatisfaction and found that body fat (not muscle dissatisfaction) was linked to bulimia as measured by the Eating Disorder Inventory Bulimia subscale. However, other studies revealed no relation between body fat dissatisfaction and bulimic symptomatology (Olivardia et al., 2004; Hildebrandt et al., 2004). As previously hypothesized in this chapter, the inconsistent results may be due to methodological issues such as inadequate or inappropriate measures.

Muscle dissatisfaction has also been linked to bulimic symptomatology. Researchers have provided evidence that some men who desire to gain weight engage in bulimic behaviors including over eating, binge eating and bingeing without purging (Hildebrandt et al., 2004; McCreary & Sasse, 2000; Moore, 1990; Olivardia et al., 2004; Pope et al., 2000; Raevuori et al., 2006; Ricciardelli & McCabe, 2004). For example, Moore noted that adolescent males who desired to increase muscularity engaged in
binge eating without purging. Further, Raevuori et al. reported that men who endorsed a desire to be more muscular scored higher on the bulimic symptomatology scale.

**Aerobic Exercise Dependence.** Exercise is yet another means of modifying one’s body. Exercise has been linked with both the desire to lose weight and to increase muscle (Cafri et al., 2005; McCabe & Vincent, 2002; Ricciardelli & McCabe, 2004). Results from numerous studies indicate that men prefer exercising over dieting (Drewnowski & Yee, 1985; McCabe & Ricciardelli, 2001; Pope et al., 2000). Exercise in and of itself may not be a concern. Hildebrandt et al. (2004) and Chittester and Hausenblaus (2009) found no significant relation between exercise behavior and muscle or body fat dissatisfaction. Specifically, Hildebrandt et al. reported that time spent engaged in aerobic or anaerobic activity was uncorrelated with desired muscle or desired body fat levels. Chittester and Hausenblaus reported that there was no relation between the drive for muscularity and frequency/level exercise in which the participants engaged.

The problem with exercise seems to be related to more than just frequency of exercise. Exercise dependence is conceptualized as “a craving for exercise that results in uncontrollable excessive physical activity and manifests in physiological symptoms, psychological symptoms, or both” (Hausenblas & Symons Downs, 2002, p. 90). Others have described it as “a process that compels an individual to exercise in spite of obstacles and results in physical and psychological symptoms of depression and guilt when exercise is withdrawn.” (Ricciardelli & McCabe, 2004, p. 180). When studied alongside exercise behavior, exercise dependence has been shown to be more strongly related to muscle dissatisfaction among male college students (Chittester & Hausenblaus).
Additionally, Hale et al. (2010) reported a significant relation between the drive for muscularity and exercise dependence.

Originally, exercise dependence was studied among runners and examined in its relation to running (Allegre, Souville, Therme, & Griffiths, 2006). In the male body dissatisfaction literature, exercise dependence has been studied as it related to muscle dissatisfaction. However, exercise dependence may also be related to attempts at weight loss and addressing body fat dissatisfaction. Studies indicated that men prefer to exercise to lose weight (Drewnowski & Yee, 1985; Pope et al., 2000). It is possible that this desire to lose weight via exercise may morph into a problem with exercise dependence. No studies were found that simultaneously examined the relations of both body fat dissatisfaction and muscle dissatisfaction to exercise dependence.

**Weightlifting Dependence.** Weightlifting is another activity in which men engage to alter their bodies. It is distinct from exercise in that the immediate purpose of weight lifting is to build muscle. Pope et al. (2000) noted that men who see themselves as lacking muscularity may engage in body building activities. Men who report muscle dissatisfaction are more likely to engage in weight lifting (Litt & Dodge, 2008; Ricciardelli & McCabe, 2004). McCreary and Sasse (2000) found that men with higher levels of muscle dissatisfaction spent more time lifting weights than did those with lower dissatisfaction. Arbour and Martins Ginis (2006) found similar results.

**Depressive Symptomology.** Turning from behavioral indicators of male body dissatisfaction, depression has been linked to body dissatisfaction among men (Bergeron & Tylka, 2007; Blashill, 2010; Cafri et al., 2002; McCreay & Sasse, 2000; Olivardia et al., 2004; Pope et al., 2000). While it appears that men who are dissatisfied with their
bodies may experience depression, it is unclear which aspect of dissatisfaction predicts depression. Some studies indicated that muscle dissatisfaction, as an indicator of overall body dissatisfaction is predictive of depressive symptomology (Cafri et al; McCreary & Sasse; Olivardia et al.). Conversely, there are studies that report that body fat dissatisfaction is more strongly related to depression (Bergeron & Tylka; Blashill). It is possible that both pathways account for the relation between body dissatisfaction and depression.

In summary, studies using various assessment methods have provided inconsistent results regarding the relations between anorexia, bulimia, exercise dependence, weightlifting dependence, and depression. Studies are clear that weightlifting is linked to muscle dissatisfaction. However, the relation between weight lifting and body fat dissatisfaction has not been assessed.

**Assessment Concern applied to Internationalization of the Sociocultural Ideal Male Image**

The methodological problem of using a measure that does not adequately assess the male experience of body dissatisfaction is also of concern when assessing sociocultural influences on male body dissatisfaction. Sociocultural influences have been shown to be a significant predictor of body image concern for women (Choate, 2005). Research with male samples has indicated that men are also influenced by the sociocultural standard of the ideal male image (Olivardia et al., 2004). A major concern with the studies that link sociocultural ideal male image to male body dissatisfaction is that the measure used to assess internalization of the male ideal does not appear to reflect adequately the sociocultural ideal male image.
Researchers have demonstrated that men are exposed to, aware of, and negatively impacted by the ideal male body image as indicated by greater body dissatisfaction (Blond, 2008; Giles & Close, 2008; Hobza & Rochlen, 2009; Pope et al., 2000; Warren, 2008). For example, among 158 male college students, Agliata and Tantleff-Dunn (2004) found that the average person has a high degree of daily exposure to television advertisements, 25% of which are appearance-related. They found that exposure to appearance-related advertisements (as opposed to neutral advertisements) was associated with significantly higher reports of muscle dissatisfaction and depression. Giles and Close (2008) had similar findings regarding exposure and dissatisfaction. In a study conducted with 161 male university students in the UK on exposure to men’s magazine, the authors found that exposure was positively correlated to dissatisfaction with muscularity (as measured by the DMS). Other studies have also shown that exposure to magazine images of muscular men correlated with lower body satisfaction (Arbour & Martin Ginis, 2004; Hobza & Rochlen, 2009; Morry & Staska, 2001). In a review of the literature on the influence of exposure, Blond (2008) concluded that studies have demonstrated a relation between exposure to the sociocultural ideal image and male body dissatisfaction. Blond noted that despite the wide variance in the measures used to assess male body dissatisfaction, exposure to the sociocultural ideal consistently predicted body dissatisfaction among men.

The majority of studies conducted to assess sociocultural influences have focused on exposure. However, awareness and internalization are also related to body dissatisfaction. Results from Warren’s (2008) study indicated that awareness of the ideal (as measured by the Awareness subscale of the Sociocultural Attitudes Towards
Appearance Scale, SATAQ, Heinberg et al., 1995) influenced body dissatisfaction among 111 Caucasian and 91 Latino males. Internalization of the ideal also predicts body dissatisfaction (Daniel & Bridges, 2010; Giles & Close, 2008; Grammas & Schwartz, 2009; Morry & Staska, 2001; Vartanian et al., 2001). In a study conducted on 202 college males that examined predictors of male body image, results indicated that internalization of the sociocultural ideal male image (as measured by the Internalization subscale of the SATAQ) significantly predicted body dissatisfaction as assessed by the MBAS (Grammas & Schwartz, 2009). Internalization predicted both muscle and body fat dissatisfaction. This was the only study of sociocultural influences (exposure, awareness or internalization) that utilized a Likert measure with dual pathways to body dissatisfaction.

Additionally, studies have shown that when internalization is entered into the model with exposure or awareness as predictors of body dissatisfaction, internalization is stronger. Internalization mediates the relations between exposure and dissatisfaction (Giles & Close, 2008; Morry & Staska, 2001) and awareness and dissatisfaction (Warren, 2008). Overall, it appears that men are exposed to, aware of, and internalize the sociocultural ideal but that ultimately it is internalization that most strongly influences the development of body dissatisfaction. These findings on the relations among exposure, awareness, internalization, and body dissatisfaction are similar to the findings for women.

The Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ; Heinberg et al, 1995), a widely used sociocultural influence measure, was originally designed to measure female participants’ awareness and internalization of culturally sanctioned societal standards of female beauty, mainly defined as thinness. A sample
The measure has been revised for use with male populations (Morry & Staska, 2001). Morry and Staska (2001) modified the scales to reflect better the ideal male body image. The words “men” replaced “women”, “muscular/fit” replaced “thin”, “bodybuilder” replaced “swimsuit model” and “Men’s Fitness” and “Muscle & Fitness” replaced “Cosmopolitan, Vogue, and Glamour.” The main problem with this modification is that it created items that are vague. Instead of separately assessing endorsement of low body fat ideal and high masculinity ideal, the items either combine the pathways or stress muscularity.

Replacing the word “thin” with “muscular/fit” does not allow for assessment of each component of the sociocultural ideal male. In the current study, the measure was further modified so that participants were able to endorse the “lean” ideal and the “muscularity” ideal. Further, one item appears to assess only internalization of muscularity. Morry and Staska replaced the word “swimsuit model” with “bodybuilder.” The participant is asked about his desire to look like a “bodybuilder.” As this only assesses one path, a corresponding item was added that asks about participants’ desire to look like a “runner.” Making clear distinctions between the two elements of the ideal male body image will provide for more accurate understanding of the internalization process including the predictive utility of the measure.

The Purpose of the Study

This study aimed to extend the literature on male body image. The primary purpose of this study was to use appropriate measures to examine the relations among the distinct pathways of male body dissatisfaction, the internalization of the sociocultural ideal male body image, and behavioral and psychological outcomes including anorexia,
bulimia, excessive exercise, excessive weight lifting, and depression. Because of the previously discussed inconsistent findings in the literature, I was interested in assessing outcomes of body dissatisfaction using an empirically validated measure created specifically to address the male experience of body dissatisfaction. Overall, the primary research questions were: (1) Whether male body dissatisfaction consists of two separate but related pathways that predict unique outcomes; and (2) Whether they mediate the relations between internalization of the sociocultural ideal and the outcomes. A mediation model is hypothesized and presented in Figure 1.

Specific research questions and hypotheses were as follows:

(1) Are there distinct pathways to the dual components of male body dissatisfaction?

Hypotheses: Research indicates that culture defines the standards for comparison (Jackson, 2002) and that internalization of the cultural female standard among women strongly predicts body dissatisfaction (Stice et al., 1994). The sociocultural ideal male body image is lean and muscular and men report being dissatisfied with their body fat level and muscularity (Pope et al., 2000). Based on these findings, I hypothesized that the internalization of the lean image will predict body fat dissatisfaction (Path A) and internalization of the muscular image will predict muscle dissatisfaction (Path B).

(2) While research is clear that men report dissatisfaction with their level of body fat and/or muscularity (Frederick et al., 2007; Olivardia et al., 2004; Pope et al., 2004; Tiggemann et al., 2007), results are less clear on outcomes of these specific components of male body dissatisfaction. Thus, the question arises: do body fat dissatisfaction and muscle dissatisfaction predict distinct outcomes?
Hypotheses: Regarding body fat dissatisfaction, research has demonstrated a connection between dietary restriction and the desire to lose weight (Cafri et al., 2005; Drewnowski & Yee, 1985; Pope et al., 2000). Findings have indicated a clear link between body fat dissatisfaction and dietary constraint (Blashill, 2010; Heywood & McCabe, 2006), compulsive dieting (Pope et al., 2000) and risk for anorexia (Goldfield et al., 1998). As such, I hypothesized that body fat dissatisfaction would predict anorectic symptomology (Path C).

Furthermore, empirically, bulimia has also been linked with body fat dissatisfaction (Heywood & McCabe, 2006; Riccardielli & McCabe, 2001). Similar to women who pursue thinness, some men who are dissatisfied with their body fat may engage in this type of disordered eating behavior to modify their appearance. As such, I hypothesized a relation between body fat dissatisfaction and bulimic symptomology (Path D).

Additionally, men report exercising for weight loss (Cafri et al., 2005; Vincent & McCabe, 2002; Weltzin et al., 2010). Some report a preference for exercise over dieting when attempting to lose weight (Drewnowski et al., 1995; McCabe & Ricciardelli, 2001; Pope et al., 2000). I hypothesized a significant path between body fat dissatisfaction and exercise dependence (Path E). Because weightlifting is about gaining weight (albeit muscle), I did not predict that men who were dissatisfied with their body fat levels would use weight lifting as a body modification strategy.

Finally, I hypothesized a path between body fat dissatisfaction and depression (Path F). Significant dissatisfaction with some aspect of one’s body might cause feelings
of displeasure or sadness. In some studies, body fat dissatisfaction has been linked to depression (Bergeron & Tylka, 2007; Blashill, 2010).

Hypotheses: Regarding muscle dissatisfaction, there are mixed results in the literature regarding the relation between muscle dissatisfaction and anorexic behaviors. While some research indicates no relation between dietary constraint and muscularity (Chittester & Hausenblaus, 2009; Heywood & McCabe, 2006; McCreary and Sasse, 2000), others have found a positive relation between drive for thinness and muscle dissatisfaction (Kelly et al., 2010; Olivardia et al., 2004). Because muscle dissatisfaction appears to be about a desire to increase muscle (and thus weight), I hypothesized no relation between muscle dissatisfaction and anorexic symptomology.

I did, however, hypothesize a relation between muscle dissatisfaction and bulimic symptomology (Path G). Research has consistently shown that men who desire to gain weight engage in bulimic behaviors including over eating, binge eating and bingeing without purging (Hildebrandt et al., 2004: McCreary & Sasse, 2000; Moore, 1990; Olivardia et al., 2004; Pope et al., 2000; Raevuori et al., 2006; Ricciardelli & McCabe, 2004). Men who desire to gain muscle may overeat. Perhaps, those who express muscle dissatisfaction and engage in bulimic behavior positively equate caloric intake with bulking up. Theoretically, if men are trying to increase size they would need to increase caloric intake.

Considering that men have reported a preference for exercise over diet (Drewnowski et al., 1995) it would seem that men who are dissatisfied with their muscles would engage in exercise to reach their ideal image. Empirically, researchers have demonstrated relations between exercise dependence and muscle dissatisfaction
(Chittester & Hausenblaus, 2009; Hale et al., 2010). Thus, I hypothesized a relation between exercise dependence and muscle dissatisfaction (Path H).

When individuals lift weights, they build muscle. All men in Tylka et al.’s (2005) endorsed weight lifting as a means to achieve body modification goals. Further, weight lifting and muscle dissatisfaction have been strongly correlated in Litt and Dodge (2008). As such, I hypothesized that muscle dissatisfaction would predict weight lifting dependence (Path I).

Finally, similar to the argument for the relation between body fat dissatisfaction and depression, it is possible that dissatisfaction with one aspect of the body leads to overall negative affect. Researchers have demonstrated a link between muscle dissatisfaction and depression (Bergeron & Tylka, 2007; Blashill, 2010; Cafri et al., 2002; Olivardia et al., 2004). As such a significant relation between muscle dissatisfaction and depressive symptomatology was hypothesized (Path J).

(3) When assessed simultaneously, does one component more strongly predict a certain outcome than the other?

A major expectation of the current study was that both body fat dissatisfaction and muscle dissatisfaction would have significant yet unique relations with all of the measures, expect for the relations between body fat dissatisfaction and weight lifting and muscle dissatisfaction and anorexia. However, I hypothesized that when both body fat dissatisfaction and muscle dissatisfaction were included in the model, body fat dissatisfaction would more strongly predict anorexic and bulimic symptomology and aerobic exercise dependency, and that muscle dissatisfaction would more strongly predict weight lifting dependency.
Summary of Hypotheses

1. Path (A): Internalization of the lean sociocultural ideal would predict body fat dissatisfaction.

2. Path (B): Internalization of the muscular sociocultural ideal would predict muscle dissatisfaction.


4. Path (D): Body fat dissatisfaction would predict bulimic symptomology.


6. Path (F): Body fat dissatisfaction would predict depressive symptomology.

7. Path (G): Muscle dissatisfaction would predict bulimic symptomology.


Figure 1. Hypothesized Model
Chapter 3

METHODS

Participants

Participants were 215 male undergraduate and graduate students at a large southwestern university between the ages of 18 to 29 years old. Respondents ranged in body mass index (BMI= Kg/M$^2$) between 14.23–44.64 with an average BMI of 22.12 ($SD= 4.18$). According to the National Heart, Lung, and Blood Institute (2013), normal weight BMI ranges from 18.5 to 24.9. Height ranged between 5 feet 1 inch to 6 feet 6 inches with an average height of 5 feet 9 inches ($SD= .076$). Weight ranged between 110-365 lbs. with an average weight of 176 lbs. ($SD = 36.07$). In terms of ethnicity, 60% of participants were non-Hispanic Caucasians, 13% were Latino, 13% were Asian or of Asian descent, 1% were African or of African descent, and 1% were of mixed ethnicity. One respondent indicated American Indian descent and 1 respondent indicated Native Hawaiian descent. In terms of year in school, 24 (11%) were in their first year, 39 (18%) were in their second year, 56 (26%) were in their third year, 61 (28%) were in their fourth year, 18 (.8%) were master’s level, and 17 (.8%) were doctoral level students.

Measures

Demographic Questionnaire. Participants provided demographic information including: age, height, weight, year in school, major, ethnicity, and sexual orientation.

Male Body Dissatisfaction: The Male Body Attitude Scale (MBAS; Tylka et al., 2005). The MBAS is a 24-item self-report scale designed to measure key dimensions of body dissatisfaction in males: muscularity, body fat, and height. Sample items regarding muscularity include: “I think I have too little muscle on my body,” and “I think my chest
should be broader.” Sample items pertaining to body fat include: “I think my body should be leaner,” and “I think that I have too much fat on my body.” Participants respond on a scale ranging from 1 (always) to 6 (never) with lower scores indicative of a greater degree of dissatisfaction.

While the MBAS includes level of satisfaction with height, this subscale was not part of the current study. The current study focused on body fat and muscles that can be altered. Height cannot be altered and as such may have a different relationship to outcomes. Blashill (2010) reported that body fat and muscle dissatisfaction were both significantly related to numerous outcome variables whereas height dissatisfaction was not significantly related to any of the outcome variables.

Convergent validity was demonstrated. The MBAS total scale and muscularity and body fat subscales were correlated with body esteem. The MBAS total scale and muscularity subscale was highly correlated with the Drive for Muscularity Scale. Discriminant validity was evidenced via the non significant relations between the MBAS total scale and subscales to impression management (Tylka et al., 2005).

Among their study of 294 undergraduate males, Tylka et al. (2005) report Cronbach’s alphas of .92 for the total score, .90 for the muscularity subscale, and .94 for body fat. Due to systematic error, item 7 “I think my shoulders are too narrow,” was removed from the final analysis. Cronbach’s alpha in the present sample was .92 and .91 for body fat dissatisfaction and muscularity dissatisfaction respectively.

**Internalization of cultural standard.** A modified version of the 8-item Sociocultural Attitudes Towards Appearance Questionnaire-Internalization subscale (SATAQ-Int; Heinberg et al., 1995) was used to assess internalization of the sociocultural
ideal male body image. This scale was originally developed to assess women’s 
acceptance of society’s standard for appearance due to media exposure. Participants rate 
their responses on a scale of 1 (completely disagree) to 5 (completely agree). A sample 
item on the original measure is: “Women who appear in TV shows and movies project 
the type of appearance that I see as my goal.” Higher scores indicate greater 
internalization of standards of appearance that exist in the media. Heinberg et al. (1995) 
reported Cronbach’s alphas of .88 for internalization. Convergent validity was 
demonstrated between the SATAQ and several measures of body image and eating 
disorders including: the Rosenberg Self-Esteem Inventory, the Multidimensional Body 
Self-Relations Questionnaire, Physical Appearance State and Trait Anxiety Scale, Body 
Image Avoidance Questionnaire, and the Eating Disorders Inventory. Discriminant 
validity has been demonstrated (Heinberg et al., 1995).

Morry and Staska (2001) modified the scales to reflect better the ideal male body 
image. The words “men” replaced “women”, “muscular/fit” replaced “thin”, 
“bodybuilder” replaced “swimsuit model” and “Men’s Fitness” and Muscle & 
Fitness” replaced “Cosmopolitan, Vogue, and Glamour.” Alphas for the SATAQ-M 
among college males ranged from .79-.92 (Agliata & Tanleff-Dunn, 2004; Giles & Close, 
2008; Grammas & Schwartz, 2009; Morry & Staska, 2001).

As the Morry and Staska (2001) modification of the scale did not fully assess the 
distinct paths of the sociocultural ideal male body image (lean and muscular), I further 
modified the measure. From the Morry and Staksa (2001) version, I changed the term 
“fit” to “lean.” The items with the term “muscular/fit” were separated to assess the 
distinct paths. For example, the item “Photographs of muscular/fit men make me wish I
were muscular/fit” was changed to two items: “Photographs of muscular men make me wish I were muscular” and “Photographs of lean men make me wish I were lean.” Further, while there was an item that assessed desire to look like a “bodybuilder” representing a desire for muscularity, I added an item to assess a desire to look like a “runner” thus representing desire for decreased body fat. In the present study each subscale consisted of four items. Cronbach’s alpha for the current revised measure with this study was .85 and .85 for internalization of the lean ideal and internalization of the muscular ideal, respectively.

Anorexia. The Drive for Thinness Subscale of the Eating Disorders Inventory (EDI-DT; Garner et al., 1983) was used to assess desire drive for thinness. The Eating Disorder Inventory is a 64 item, self-report multiscale survey designed to measure psychological and behavioral traits common among individuals with eating disorders. The anorexia scale includes seven items that measure preoccupation with body weight, excessive concern with dieting, and fear of becoming fat. Sample items include “I think about dieting,” and “I am preoccupied with the desire to be thinner.” Participants rate their responses on a scale of 1(never) to 6 (always). Higher total scores indicate greater anorexic symptomology.

The 64 item EDI measure was normed on women meeting a diagnosis of Anorexia Nervosa (N= 113) and a female comparison group (N=577) of college students. The group of women diagnosed with Anorexia Nervosa consisted to two subsamples: “Restricters” or “Bulimics.” Items for the measure were considered valid if they were able to distinguish between the participants in the anorexia nervosa group and the control
group. Additionally, items had to demonstrate homogeneity and be more highly correlated with the subscale to which they were intended than to any other subscale.

Regarding criterion-related validity, results from the original study conducted by Garner et al. (1983) demonstrated a significant correlation with the agreement between therapist-consultant and participants’ self-report. Convergent validity was shown by significant correlations with other measures that assess the drive for thinness including the Eating Attitudes Test (EAT; Garner & Garfinkel, 1979) \((r = .88, p < .001)\) and a restraint scale. Conversely, among a sample of 23 women diagnosed with Anorexia Nervosa, the drive for thinness subscale was not significantly correlated with measures that assessed body dissatisfaction, self-esteem, locus of control, or depression (Garner et al., 1983).

Regarding reliability, Cronbach’s alpha for the drive for thinness subscale was .85 for the AN group and .85 for the FC group. Wear and Pratz (1987) examined test-retest reliability of the EDI among a sample of 53 female and 17 male undergraduate psychology students. The 3-week interval test-retest showed reliability of .92 for the drive for thinness subscale.

Research conducted with men and women has demonstrated the scales’ reliability and validity for use with men (Spillane, Boerner, Anderson, & Smith, 2004). Using a sample of 215 college women and 214 college men, researchers revealed that the eight-factor structure of the overall EDI (including the anorexia subscale), the factor loadings, factor variances, and factor intercorrelations were equivalent for both genders (Spillane et al., 2004). Cronbach’s alpha on the EDI-DT when used with male samples ranged from .84 - .86 (Kelly et al., 2004; Keel, Baxter, Heatherton, & Joiner, 2007). Studies have
linked the EDI-DT to fat displeasure, body anxiety, body compulsivity, body esteem, body inadequacy, and disordered eating in men (Kelly, Neufeld, & Musher-Eizenman, 2010; Olivardia et al., 2004).

For the present study, one word of this scale was modified to better assess male dissatisfaction with body fat. The word “thinness” was replaced with the word “leanness.” This modification was in line with terms used in the body dissatisfaction and internalization scales. Cronbach’s alpha in the present sample was .87

**Bulimia.** The Bulimia Subscale of the Eating Disorder Inventory (EDI-B; Garner et al., 1983) was used to assess bulimic symptomology. This subscale includes seven items that measures tendency towards uncontrollable bingeing which may be followed by purging. Sample items include “I have gone on eating binges where I have felt that I could not stop” and “I eat or drink in secrecy.” Participants rate their responses on a scale of 1(*never*) to 6(*always*). Higher scores indicate greater bulimic symptomology.

Criterion-related validity for the subscales was demonstrated when respondents scored in the theoretically expected manner (Garner et al., 1983). For example, the bulimic subgroup of the women diagnosed with anorexia scored higher on the bulimia subscale than the resticter anorexic participants. Women diagnosed with bulimia had elevated scores on the bulimia subscale. Obese women had higher scores than the control university student group on the bulimia scale. Additionally, results from the Garner et al. (1983) study demonstrated a significant correlation in the agreement between therapist-consultant and participants’ self-report.

Convergent validity was shown by significant correlations between the bulimia scale and measures that assessed restraint, body dissatisfaction, and lack of self-control.
Conversely, the bulimia subscale was not significantly related to measures that assessed depression, self-esteem, or locus of control or the Eating Attitudes Test (EAT) which is a measure of symptoms of anorexia. Garner et al. (1983) reported Cronbach’s alpha .90 for the bulimia scale. Three-week interval test-retest conducted by Wear and Pratz (1987) demonstrated a reliability of .90 for the bulimia subscale.

Research conducted with men and women has demonstrated the scales reliability and validity for use with men (Spillane, Boerner, Anderson, & Smith, 2004). Using a sample of 215 college women and 214 college men, they revealed that the eight-factor structure, factor loadings, factor variances, and factor intercorrelations were equivalent for both genders (Spillane et al., 2004). Cronbach’s alpha when used male college students was .86 (Heywood & McCabe, 2006).

Due to systematic error, item 7 “I eat or drink in secrecy,” was removed from the final analysis. Cronbach’s alpha in the present sample was .81.

**Aerobic Exercise Dependence.** The Exercise Dependence Scale (EDS; Hausenblaus & Symons Downs, 2002) was used to assess the psychological and behavioral aspects of exercise dependency. The 21-item measure consists of seven subscales: Tolerance, Withdrawal, Continuance, Lack of Control, Reduction in Other Activities, Time, and Intention Effects. Sample items include “I think about exercise when I should be concentrating on school or work,” and “I spend most of my free time exercising.” Participants rate their responses on a scale of 1(*never*) to 6(*always*). Higher scores indicate greater exercise dependence symptomology.

The scale was developed and validated on a total of 2,420 male and female participants across 5 studies. The scale is able to distinguish between people who are at-
risk for, have symptoms of, or have no symptoms of excessive exercise. Providing evidence for criterion validity, people who were at-risk for exercise dependency report more exercise behavior and perfectionist tendencies (Symons Downs, Hausenblaus, & Nigg, 2004).

Convergent validity was demonstrated through correlation with the Leisure-Time Exercise Questionnaire, the Multidimensional Perfectionism Scale, The Exercise Dependency Questionnaire, and The Obligatory Exercise Questionnaire (Hausenblaus & Symons Downs, 2002; Symons Downs et al., 2004). Discriminant validity was shown when the EDS was not significantly correlated with the Questionnaire for Eating Disorder Diagnosis or a measure of social anxiety (Symons Downs, Hausenblaus, & Nigg, 2004). The researchers note that the lack of correlation between the EDS and the eating disorder measure demonstrates that the study examines exercise symptoms as opposed to symptoms of eating pathology.

Internal consistency for the overall measure was .94 with the seven subscale alpha’s ranging from .78-.92. Cronbach’s alphas for the subscales in a recent study with male college students ranged from .75-.90.

In order to condense the measure, thereby reducing test fatigue of the participants, I modified the measure. The item with the highest factor loading from each of the seven subscales was selected. Factor loadings ranged from .85 to .96 (Symons Downs, Hausenblaus, & Nigg, 2004). Cronbach’s alpha in the present sample was .87.

**Weight Lifting Dependence.** To date, there is no measure that exists which assesses weight lifting dependence among men or women. Researchers typically rely on single item questions as a measure of weight lifting behavior and dependence (Litt &
Dodge, 2008). In order to obtain a more accurate assessment of weight lifting behavior, I adapted the 7 items from the modified Aerobic Exercise Dependence scale to reflect weight lifting. A sample item was “I spend most of my free time weight lifting.” Cronbach’s alpha in the present sample was .89

**Depression.** The Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977) was used to assess depressive symptomology. This 20 item self-report measure assesses depressive symptoms within the past week. Sample items include: “I felt everything I did was an effort,” and “I could not get going.” Participants rate their responses on a scale of 1 (rarely or none of the time) to 4 (most or all of the time). Higher scores indicate greater depressive symptomology.

The scale was developed and validated on a total of 2,420 male and female participants across five studies. Items were chosen from a pool of previously validated depression scales. Items reflecting the salient components of depression were identified including: Depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite, and sleep disturbance.

Providing evidence for criterion validity, psychiatric inpatient participants scored higher on the measure than participants from the general population. Convergent validity was demonstrated through correlation with other measures of depression, negative affect and general psychopathology. Discriminant validity was demonstrated when the CES-D was negatively correlated with a measure of positive affect. Original internal consistency for the measure was .85 in the general population and .91 with the psychiatric patient sample. Cronbach alpha’s for the measure used with the college male sample was .91 (Bergeron & Tylka, 2007).
Again, in an effort to minimize test fatigue, the 10-item short version of this scale was used. Internal consistency of the shortened measure was similar to that of the original 20-item scale (Irwin, Artin, & Oxman, 1999). Cronbach’s alpha for the 10 item scale used among 85 male and female college students was .86 (Langhinrichsen-Rohling, Bowers, O’Brien, & Morgan, 2004). CES-D Cronbach’s alpha in the present sample was .87.

**Procedure**

Subsequent approval from the University’s Institutional Review Board, an email was sent to instructors, department chairs, program coordinators, and student organization leaders that described the study, requested either online or in-person participation, and provided a link to the study. Participants were solicited online via listservs, and in class. Before completing the self-report questionnaire, participants were provided with a general rationale for the study. They were informed that the study concerns body image and factors that influence their self-perception. They were also informed that their participation was voluntary, anonymous, and that their participation would not affect their grade.

**Analysis**

Data were collected from 841 male and female respondents. The data were the screened based on the target criteria (e.g. adult between 18 and 29 years old and male) which resulted in a final sample of 215. Of the 215 participants, 32 completed the paper survey and 183 completed online survey. Fifty participants in the final sample had missing data; 85% of missing data were from online participants and 15% were from in-person administration. Of the 50 cases with missing data, 50% missed only a single item
in the entire survey, 16% missed only two items, 16% missed three to nine items, 10% missed 10 to 20 items; and less than 1% missed between 20 to 40 items. Full information maximum likelihood (FIML) was utilized to account for missing data. FIML is an estimation process that simultaneously calculates estimates of parameters to create unbiased parameter estimates and standard errors. A likelihood function is estimated for each individual based on the variables that are present. In this process all available data are used to account for missing data (Kline, 2005).

The proposed measurement and structural models were assessed using structural equation modeling (SEM) with EQS Structural Equation Program (Bentler, 1995). Because psychometric imperfections of observed variables are not examined in path models (Sass & Smith, 2006), parcels were created and used as indicators of latent constructs (Little et al., 2002). Bandalos (2008) highlights that parceling is preferred for situations in which the data to be analyzed are nonnormally distributed and/or coarsely categorized. Additionally, researchers note that item level data has lower reliability, lower communality, a smaller ratio of common-to-unique factor variance, and greater likelihood of distributional violations (Hall et al., 1999; Little et al., 2002). Conclusions about the ability of the model to adequately reproduce the data were based on both global and local (residuals) fit indices. The following global fit indices were used: the chi-square goodness of fit, the comparative fit index (CFI), the standardized root mean squared residual (SRMR), and the root mean squared error of approximation (RMSEA) with 90% confidence interval (Hu & Bentler, 1999; Kline, 2005). As the chi-square value increases, model fit decreases; as such, a large chi square value reflects poor fit (Kline, 2005). Hu and Bentler (1999) suggest additional global fit indices to supplement
the chi square fit test. On the CFI, SRMR and RMSEA values range from 0 to 1.0. On the CFI, values close to 1.0 are indicative of best fit. While Kline (2005) notes that values greater than .90 indicate reasonably good fit, Hu and Bentler suggest a cut off of .95 on the CFI. On the RMSEA, a value close to .05 is indicative of ideal fit, .08 indicative of reasonable fit and .1 or more signifying poor fit (Kline, 2005). Values less than .10 on the SRMR denote adequate fit (Hu & Bentler, 1999; Kline, 2005). However, when assumptions of data normality are violated, these fit indices, based on normal estimation methods may not accurately reflect the data. When these assumptions are not met, robust estimations were used.

Typically, the chi-square difference test is used to determine which of the nested models best fit the data (Kline, 2005), however, when analyses are based on non-normal data and Robust estimations, the chi-square difference test is not appropriate (Byrne, 2006). Instead, the Satorra and Bentler (2001) corrected chi-square difference test was used to assess best fit between nested models.
Chapter 4

RESULTS

Measurement Model: Preliminary Analyses

I first assessed the measurement model for each scale separately to see if the models were supported at the scale level. Then I combined all the scales together into one overall test of the measurement model prior to testing the structural model.

With regard to the SATAQ, I started by examining whether my 8-item modified version of the internalization of sociocultural attitudes towards the ideal male body was a one- or two-dimensional construct, I evaluated whether the SATAQ-Lean Ideal and SATAQ- Muscle Ideal formed a single factor. The initial confirmatory factor analysis conducted in EQS included four items per subscale for a total of 8 items. The one factor model was a poor fit to the data (CFI = .801 and RMSEA = .204 [90% CI: .177-.230], S-B\(\chi^2\)(20, N = 215) = 190.94, \(p < .000\)). The model that separated the two types of scales into different correlated latent variables, while a better fit to the data, was still a poor fit overall (CFI = .860 and RMSEA = .175 [90% CI: .148-.202], S-B\(\chi^2\)(19, N = 215) = 139.26, \(p < .0001\)). While the Satorra-Bentler chi-square difference between the two models was significant (S-BA\(\chi^2\)(1, N = 215) = 19.24, \(p >.05\)), indicating that the two-factor model better represented the data, neither of the models were a good fit to the data.

Upon examination of the residual matrices and factor loading from two-factor confirmatory factor analysis of the SATAQ, I deleted two items in the internalization of the lean ideal subscale and one item from the internalization of the muscularity ideal subscale. I tested the paired down model with five items to assess whether it was a one- or two-dimensional construct. While the one-factor model fit the data well (CFI = .966,
SRMR = .024, and RMSEA = .119 [90% CI: .066-.176], $\chi^2(5, N = 215) = 19.56, p < .001$), the model that separated the two types of scales into different correlated latent variables was a better fit (CFI = .996, SRMR= .024, and RMSEA = .046 [90% CI: .000-.122], $\chi^2(4, N = 215) = 5.77, p > .05$). The chi-square difference test between the two models was significant $\Delta\chi^2(1, N = 215) = 13.79, p > .05$, indicating that the two-factor model better represented the data. Thus I kept the revised 5 item, two subscale version of the SATAQ.

I also tested if the MBAS was a one-or-two dimensional construct. I assessed if body fat dissatisfaction and muscularity dissatisfaction formed a single factor. The model was not found to fit the data well (CFI = .604 and RMSEA = .174 [90% CI: .161-.185], $S-B\chi^2(104, N = 215) = 710.088, p < .000$). The model that separated the two types of scales into different correlated latent variables was a better fit to the data (CFI = .904 and RMSEA = .086 [90% CI: .072-.099], $S-B\chi^2(103, N = 215) = 249.96, p < .0001$). The test difference between the two models was significant $S-B\Delta\chi^2(1, N = 215) = 370.255, p > .05$, indicating that the two-factor model better represented the data. In light of these results, I maintained the two-factor model for both the SATAQ and the MBAS when examining the relationships among the study variables.

Item responses on the remaining scales demonstrated non normal data which can have strong effects in some SEM estimation procedures. Thus, parcels were created for the MBAS-Body Fat Dissatisfaction, MBAS-Muscularity Dissatisfaction, EDI-Anorexia, EDI-Bulimia, Aerobic Exercise Dependence, Weight Lifting Dependence, and Depression. After entering individual scale items into an exploratory factor analysis using principal axis factoring, three-item parcels were formed by sequentially combining
the items with the highest item factor loading with the items with the lowest item factor loading (Hall, Snell, & Foust, 1999). Subsequent parceling, the Exercise Dependence, Depression, and MBAS Muscle Dissatisfaction scales demonstrated normal data whereas the EDI Lean, EDI Bulimia, Weight Lifting Dependence, and Muscle Dissatisfaction scales continued to display non normal data. I used robust estimation to interpret results.

The means, standard deviations, and correlations among all the modified scale-level variables in the model are presented in Table 1. The internal consistency of each of the parcels ranged from .81 to .92 with a mean value of .87, indicating that each parcel was internally consistent.

### Table 1
**Descriptive Statistics and Intercorrelations Among Modified Scale Level Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lean Ideal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Muscular Ideal</td>
<td>.656**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Body Fat Diss</td>
<td>.450**</td>
<td>.289**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Muscle Diss</td>
<td>.391**</td>
<td>.545**</td>
<td>.350**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Anorexia</td>
<td>.510**</td>
<td>.281**</td>
<td>.773**</td>
<td>.330**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Bulimia</td>
<td>.168*</td>
<td>.083</td>
<td>.383*</td>
<td>.196**</td>
<td>.386**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Aerobic</td>
<td>.179**</td>
<td>.265**</td>
<td>.166*</td>
<td>.284**</td>
<td>.291**</td>
<td>.273**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Weight Lift</td>
<td>.181**</td>
<td>.298**</td>
<td>.157*</td>
<td>.358**</td>
<td>.290*</td>
<td>.155*</td>
<td>.805**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Depression</td>
<td>.211**</td>
<td>.185**</td>
<td>.292**</td>
<td>.381*</td>
<td>.276**</td>
<td>.396*</td>
<td>.135</td>
<td>.101</td>
<td></td>
</tr>
<tr>
<td><em>M</em></td>
<td>2.65</td>
<td>3.00</td>
<td>2.87</td>
<td>2.90</td>
<td>2.4</td>
<td>1.85</td>
<td>2.35</td>
<td>1.98</td>
<td>1.86</td>
</tr>
<tr>
<td><em>SD</em></td>
<td>1.25</td>
<td>1.15</td>
<td>1.23</td>
<td>1.05</td>
<td>1.09</td>
<td>.82</td>
<td>.95</td>
<td>.99</td>
<td>.57</td>
</tr>
<tr>
<td>Alpha</td>
<td>.85</td>
<td>.85</td>
<td>.92</td>
<td>.91</td>
<td>.87</td>
<td>.81</td>
<td>.82</td>
<td>.90</td>
<td>.87</td>
</tr>
</tbody>
</table>

**Note.** *N* = 215. Lean Ideal = Sociocultural Attitude Towards Appearance Questionnaire Lean Internalization subscale; Muscular Ideal = Sociocultural Attitude Towards Appearance Questionnaire Muscular Internalization subscale; Body Fat Diss = Male Body Attitudes Scale Body Fat Dissatisfaction Subscale; Muscle Diss = Male Body Attitudes Scale Muscularity Dissatisfaction Subscale; Anorexia = Eating Disorder Inventory Anorexia subscale; Bulimia = Eating Disorder Inventory Bulimia subscale; Aerobic = Aerobic Exercise Dependence scale; Weight Lift = Weight Lifting Dependence scale; Depression = Center for Epidemiological Studies Depression Scale.  
*p < .05.  **p < .01.
Measurement Model: SEM Analyses

The fit of the measurement model using item parcels (depicted in Figure 1) was adequate (CFI = .906 RMSEA = .069 [90% CI: .060 -.078], S-Bχ²[263, N = 215] = 515.54, p < .001). Standardized parameter estimates and error for the measurement model are presented in Table 2. Factor loadings ranged between .46 and .96. Typically the item (SATAQ 11) that loaded at .462 would be considered for deletion from the Internalization of the Lean Ideal Subscale. However, deleting that item would make the subscale a single item measure. Thus the item was maintained and I moved on to examining the full structural model.

![Measurement Model with Parcels](image)

*Figure 2. Measurement Model with Parcels.*
Table 2
Standardized Parameter Estimates for the Measurement Model

<table>
<thead>
<tr>
<th>Latent and Observed Variables</th>
<th>Factor Loading</th>
<th>Error Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lean Ideal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SATAQ9</td>
<td>.827</td>
<td>.562</td>
</tr>
<tr>
<td>SATAQ11</td>
<td>.462</td>
<td>.887</td>
</tr>
<tr>
<td><strong>Muscular Ideal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SATAQ2</td>
<td>.635</td>
<td>.773</td>
</tr>
<tr>
<td>SATAQ4</td>
<td>.828</td>
<td>.561</td>
</tr>
<tr>
<td>SATAQ8</td>
<td>.964</td>
<td>.266</td>
</tr>
<tr>
<td><strong>Body Fat Dissatisfaction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MBASBF1</td>
<td>.931</td>
<td>.365</td>
</tr>
<tr>
<td>MBASBF2</td>
<td>.865</td>
<td>.502</td>
</tr>
<tr>
<td>MBASBF3</td>
<td>.878</td>
<td>.478</td>
</tr>
<tr>
<td><strong>Muscle Dissatisfaction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MBASMU1</td>
<td>.948</td>
<td>.318</td>
</tr>
<tr>
<td>MBASMU2</td>
<td>.865</td>
<td>.501</td>
</tr>
<tr>
<td>MBASMU3</td>
<td>.833</td>
<td>.553</td>
</tr>
<tr>
<td><strong>Anorexia</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDILEAN1</td>
<td>.854</td>
<td>.521</td>
</tr>
<tr>
<td>EDILEAN2</td>
<td>.809</td>
<td>.587</td>
</tr>
<tr>
<td>EDILEAN3</td>
<td>.832</td>
<td>.555</td>
</tr>
<tr>
<td><strong>Bulimia</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDIBUL1</td>
<td>.782</td>
<td>.623</td>
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<td>EDIBUL2</td>
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<td>EDIBUL3</td>
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<td>.599</td>
</tr>
<tr>
<td><strong>Aerobic Exercise Dependence</strong></td>
<td></td>
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</tr>
<tr>
<td>EXDEPAR1</td>
<td>.806</td>
<td>.591</td>
</tr>
<tr>
<td>EXDEPAR2</td>
<td>.800</td>
<td>.600</td>
</tr>
<tr>
<td>EXDEPAR3</td>
<td>.716</td>
<td>.698</td>
</tr>
<tr>
<td><strong>Weight Lifting Dependence</strong></td>
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<td></td>
</tr>
<tr>
<td>WLDEPAR1</td>
<td>.884</td>
<td>.467</td>
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<tr>
<td>WLDEPAR2</td>
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<td>.501</td>
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<tr>
<td>WLDEPAR3</td>
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<td>.570</td>
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<tr>
<td><strong>Depression</strong></td>
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</tr>
<tr>
<td>DEPPAR1</td>
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<td>.458</td>
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<td>DEPPAR2</td>
<td>.855</td>
<td>.519</td>
</tr>
<tr>
<td>DEPPAR3</td>
<td>.753</td>
<td>.658</td>
</tr>
</tbody>
</table>

*Note. N = 215. Lean Ideal = Sociocultural Attitude Towards Appearance Questionnaire Lean Internalization subscale; Muscular Ideal = Sociocultural Attitude Towards*
Full Structural Model

The hypothesized model (Model A) is present in Figure 2. It was hypothesized that the internalization of the lean ideal would predict body fat dissatisfaction (Path A) and that the internalization of the muscular ideal would predict muscle dissatisfaction (Path B). I predicted that the distinct facets of body dissatisfaction would mediate the paths between internalization and the outcome variables. Further, it was hypothesized that the distinct facets of male body dissatisfaction would relate differently to the outcome variables. Specifically, I hypothesized that body fat dissatisfaction would be related to anorexia (Path C), bulimia (Path D), and exercise dependence (Path E) while muscularity dissatisfaction would predict bulimia (Path G), exercise dependence (Path H), and weightlifting dependence (Path I). I expected that both body fat dissatisfaction and muscle dissatisfaction would be related to depression (Paths F and J).

Model fit indices are presented in Table 3. The hypothesized Model (Model A) demonstrated adequate fit (CFI = .904, RMSEA = .069 [90% CI: .060 -.077], S-χ²[277, N = 215] = 536.298, p < .001). A review of the largest standardized residuals revealed small covariances between error terms, particularly between anorexia and bulimia; however, none of the residuals were large enough to reflect unaccounted for paths. The difference test between Model A and the measurement model was not significant (S-BAχ²[14, N=215] = 21.54, p > .05) indicating that the models fit the data similarly.
Figure 3. Model A. Full Structural Hypothesized model. Note. Parcels and covariances between endogenous variables not depicted due to space limitation.

In Model A, there were eight significant paths: (1) Path A, the path between internalization of the lean ideal and body fat dissatisfaction, (2) Path B, the path between internalization of the muscular ideal and muscle dissatisfaction, (3) Path C, the path between anorexia and body fat dissatisfaction, (4) Path D, the path between bulimia and body fat dissatisfaction, (5) Path F, the path between depression and body fat dissatisfaction, (6) Path H, the path between internalization of the muscular ideal and exercise dependence, (7) Path I, the path between muscle dissatisfaction and weight lifting dependence, and (8) Path J, the path between muscle dissatisfaction and depression.

Next, in Model B, I deleted the two non-significant paths; Path E, the path between body fat dissatisfaction and exercise dependence, and Path G, the path between muscle dissatisfaction and bulimia. The model was an adequate fit to the data (CFI =
.905, RMSEA = .068 [90% CI: .059-.077], S-Bχ²[279, N = 215] = 536.38, p < .001. The Satorra-Bentler chi-square difference test between Model B and the measurement model was not significant (S-BΔχ²(16, N=215) = 22.11, p > .05) indicating that the two models did not fit the data differently. Thus Model B was retained as the final most parsimonious model. The significant paths with standardized parameter estimate of this final model are presented in Figure 3. As you can see from the figure, the same eight paths were significant.

Finally, I assessed the predictive power of body fat dissatisfaction versus muscle dissatisfaction on the outcome variables. The model that constrained body fat dissatisfaction and muscle dissatisfaction to be equal was an adequate fit to the data (CFI = .903, RMSEA = .069 [90% CI: .060-.077], S-Bχ²[280, N = 215] = 641.21, p < .001). The model which allowed them to freely load on the outcomes variables was a better fit (CFI = .905, RMSEA = .068 [90% CI: .059-.077], S-Bχ²[279, N = 215] = 536.38, p < .001). There was a significant difference between the models (S-BΔχ²(1, N = 215) = 7.90, p > .05), which indicates that the two parameters were significantly different, thus supporting the hypothesis that body fat dissatisfaction and muscle dissatisfaction have unique predictive utility on outcomes.
Figure 4. Final Model. Structural Model B. Standardized parameter estimates and disturbance terms. D= disturbance term. Note. Free covariance between outcome variables not depicted due to space limitation.

Table 3
Model Fit and Comparison

<table>
<thead>
<tr>
<th>Model</th>
<th>$df$</th>
<th>S-$\chi^2$</th>
<th>$p$</th>
<th>CFI</th>
<th>RMSEA [90% CI]</th>
<th>$\Delta df$</th>
<th>$\Delta S-B-\chi^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement Model</td>
<td>263</td>
<td>515.544</td>
<td>.000</td>
<td>.906</td>
<td>.069 [.060, .078]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model A</td>
<td>277</td>
<td>536.298</td>
<td>.000</td>
<td>.904</td>
<td>.069 [.060, .077]</td>
<td>14</td>
<td>21.54</td>
</tr>
<tr>
<td>Model B</td>
<td>279</td>
<td>536.38</td>
<td>.000</td>
<td>.905</td>
<td>.068 [.060, .077]</td>
<td>16</td>
<td>22.11</td>
</tr>
</tbody>
</table>

Note. N= 215. Robust estimation. CFI = comparative fit index (> .90 indicates adequate fit); RMSEA = root-mean-square error of approximation (< .06 indicates good fit); 90% CI= 90% confidence interval.
Tests of Mediation

Given the significance of the overall indirect effects, I used RMediation (Tofighi & MacKinnon, 2011) to test if specific indirect effects were significant. The indirect paths from internalization of the lean ideal through body fat dissatisfaction to anorexia, bulimia, and depression were significant. These results supported the mediation role of body fat dissatisfaction on the relations between internalization of the lean ideal and anorexia, bulimia, and depression (see Table 4).

Table 4
Results from tests of mediation.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Indirect Effect</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anorexia</td>
<td>0.77*</td>
<td>0.466</td>
</tr>
<tr>
<td>Bulimia</td>
<td>0.278*</td>
<td>0.132</td>
</tr>
<tr>
<td>Depression</td>
<td>0.107*</td>
<td>0.021</td>
</tr>
</tbody>
</table>

Note. Unstandardized regression coefficients reported. All results used Body Fat Dissatisfaction as the mediator and Lean Ideal as the independent variable.

The indirect paths from internalization of the muscular ideal through muscle dissatisfaction to aerobic exercise dependence, weightlifting, and depression were also significant. These results supported the mediation role of muscle dissatisfaction on the relations between internalization of the muscular ideal and aerobic exercise dependence, weight lifting dependence and depression (see Table 5).

Table 5
Results from tests of mediation.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Indirect Effect</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobic Exercise Dependence</td>
<td>0.194*</td>
<td>0.040</td>
</tr>
<tr>
<td>Weight Lifting Dependence</td>
<td>0.299*</td>
<td>0.162</td>
</tr>
<tr>
<td>Depression</td>
<td>0.126*</td>
<td>0.048</td>
</tr>
</tbody>
</table>

Note. Unstandardized regression coefficients reported. All results used Muscle Dissatisfaction as the mediator and Muscular Ideal as the independent variable.
Chapter 5

DISCUSSION

The relations among internalization of U.S. sociocultural standards of ideal male body image, body dissatisfaction, and negative outcomes including anorexic symptomology, bulimic symptomology, exercise dependence, weight lifting dependence, and depression among 215 young adult male college students were examined in this study. To date, this is the first study where these relations were explored using Likert-type measures specifically designed to assess the male experience and assessed using structural equation modeling.

Consistent with the hypothesis that there exist two pathways to internalization of sociocultural standards of the ideal male body image which mirrors the two pathways of male body dissatisfaction, an examination of the unidimensional model of internalization demonstrated two dimensions of internalization: the lean ideal and the muscular ideal. Given that among women, internalization of the sociocultural ideal female beauty standard (e.g. thinness) is reflected in women’s reports of their dissatisfaction with their own body fat levels (Choate, 2005), it is not surprising that each component of male dissatisfaction corresponds to separate paths of internalization of the male ideal.

Analysis of the relations between the dual paths of male body dissatisfaction and outcomes indicated that body fat dissatisfaction and muscle dissatisfaction uniquely predict outcomes. As expected, greater body fat dissatisfaction predicted greater eating pathology (e.g. anorexic and bulimic symptomology). In this way, the male response to body fat dissatisfaction is similar to that of women; in an effort to decrease body fat,
some men, who are dissatisfied with their body, engage in disordered eating behaviors. This is in line with previous findings (Cashel et al., 2003).

Also as expected, body fat dissatisfaction was not significantly related to weight lifting dependence. However, body fat dissatisfaction among men also did not significantly predict exercise dependence. It was hypothesized that, similar to women and the pursuit of thinness, men who are dissatisfied with their level of body fat and desire to decrease body fat, would engage in excessive exercise. Results from this study do not support this hypothesis.

Finally, as hypothesized, body fat dissatisfaction was related to depression. Greater body fat dissatisfaction predicted greater levels of depressed mood. Theoretically, regardless of which component of the body, if one is dissatisfied with some aspect of themselves, it can lead to negative affect. For this reason, it is not surprising that men in this study who experience muscle dissatisfaction also endorsed greater depression.

Regarding, muscle dissatisfaction as it related to the outcome variables, as expected, muscle dissatisfaction was unrelated to anorexic symptomology. This result is not surprising given that main elements of anorexic symptomology are fear of weight gain and calorie restriction to lose weight which are diametrically opposed to gaining weight (muscle).

While I did not expect a relation between muscle dissatisfaction and anorexic symptomology, I allowed for a potential relation between muscle dissatisfaction and bulimic symptomology. In order to gain weight (including muscle), one must increase his caloric consumption. It is possible that men, who believe that they need to increase
muscularity, would engage in bingeing behaviors in to gain weight. Studies have demonstrated a link between bulimic symptomology and muscle dissatisfaction (Olivardia et al., 2004; Raevuori et al., 2006). In fact, when creating and validating the Drive for Muscularity Scale, McCreary and Sasse (2000) cited bingeing without purging as a direct detrimental effect of the drive for muscularity. Results from the current study contradict these findings; there was no relation between muscle dissatisfaction and bulimia among this study’s participants.

Measurement differences is one possible explanation for these conflicting findings. Reaevuori et al. (2006) used a single item measure to assess muscle dissatisfaction and Olivardia et al. (2004) used a silhouette scale. However, when utilizing a Likert-type measure, Heywood and McCabe (2006) found that muscle size dissatisfaction was not associated with bulimia. Perhaps, silhouette and Likert-type measures capture distinct aspects of body dissatisfaction.

Consistent with the hypotheses, muscle dissatisfaction predicted exercise dependence and weight lifting. Unlike weight loss, building muscle cannot be achieved through diet alone. One must engage in physical activity in order to increase muscularity. Researchers have demonstrated that exercise dependence is related to muscle dissatisfaction (Hale et al., 2010), particularly among male college students (Chittester & Hausenblaus, 2009). As expected, males in this study who endorsed greater muscle dissatisfaction endorsed greater weight lifting dependency. Pope et al. (2000) noted that men who see themselves as lacking muscularity may engage in body building activities. Men who report muscle dissatisfaction are more likely to engage in weight lifting (Litt & Dodge, 2008; Ricciardelli & McCabe, 2004). McCreary and Sasse (2000)
found that men with higher levels of muscle dissatisfaction spent more time lifting weights than did those with lower dissatisfaction. Arbour and Martins Ginis (2006) found similar results. The current study’s findings provide further evidence of this relation.

Another significant finding in this study was the unique predictive power of the distinct pathways of male body dissatisfaction. Of note, when both body fat dissatisfaction and muscle dissatisfaction were both accounted for in the model, only the relations between body fat dissatisfaction and eating pathology, and between muscle dissatisfaction and physical activity, remained significant. Both body fat dissatisfaction and muscle dissatisfaction remained significant in predicting depression. However, contrary to Olivardia et al. (2004) who reported that muscle belittlement was more consequential than fat exaggeration in predicting depression, results from the current study indicated that it is body fat dissatisfaction that more strongly predicted depression.

There are numerous research and clinical implications from this study. Regarding research, when assessing male body dissatisfaction it is important to assess body fat dissatisfaction and muscle dissatisfaction to get a more complete picture. Further, in assessment, the utilization of both Likert-type and silhouette measures may be indicated. The mixed findings in the literature may be a result of different forms of measurement capturing different aspects of the male experience. Future studies which examine the difference between scales are warranted.

Similar to the implications for research, results highlighted the importance of assessing the male experience of body image. While the focus on male body dissatisfaction in research may be a “Johnny come lately” (Cash & Smolak, 2011), results
are clear that body image and eating disorders are no longer a strictly female concern. Thus, in working with male clients, therapists should be aware that men also receive societal messages about their bodies. These messages put forth the idea that men should be lean and muscular (Pope et al., 2000). For some men, internalizing these messages results in body dissatisfaction (Grammas & Schwartz, 2009; Morry & Staska, 2001; Warren et al. 2008). When conducting initial clinical interviews, therapists should assess what messages their male clients have internalized and whether they experience body image concerns. Especially for clients with symptoms of depression, assessing body image concerns is important in better conceptualizing presenting problems.

Further, results from this study, indicate that the dual paths of dissatisfaction result in distinct behavioral outcomes and regardless of what type of dissatisfaction men experience both paths lead to negative psychological outcomes (e.g. depression). Understanding what messages male clients internalize, what pressure they feel to meet those standards, and what path of body dissatisfaction they endorse, will help the clinician to provide appropriate clinical interventions. Those male clients who endorse greater body fat dissatisfaction may be more at risk for eating disturbances, while those who endorse greater muscle dissatisfaction may be more at risk for physical activity dependence.

Results of this study should be considered in light of several limitations. First, the modified version of the SATAQ, particularly the internalization of the lean ideal subscale, demonstrated validity concerns. While the majority of the items for the internalization of the muscular ideal loaded strongly on the muscular internalization factor, only one item loaded strongly on the lean internalization. This indicates that
something was potentially lost in the process of modifying the original scale from single item probes about “muscular/fit” to separate items. While this study provided evidence to confirm the dual pathways of body dissatisfaction, further investigation into the dual pathways of internalization is warranted. Perhaps, creating items to better assess internalization of the lean ideal would make this modification of the SATAQ Lean Internalization stronger.

The Weight Lifting Dependency scale also needs to be assessed. This scale was a modified version of the Exercise Dependency Scale. Typically, when assessing weight lifting, researchers have used single items to query frequency of the behavior (Litt & Dodge, 2008). However, frequency of a behavior is only one part of dependence. Similar to what Hausenblaus and Symons Downs (2002) demonstrated in their validation study of the exercise dependence scale, there could be psychological components to weight lifting that single items measures do not capture. To date, there exists no measure that specifically assesses weight lifting dependence. Considering that muscle dissatisfaction is a significant component of male body dissatisfaction and that weight lifting is a common method for gaining muscle, validation of a weight lifting measure is warranted for use in future studies.

Another limitation of this study relates to the generalizability of the findings. Participants in this study were young adult male college students at a 4-year predominantly Caucasian university. Replicating this study among different age groups and beyond the university setting is recommended. Perhaps the university environment had an impact on responses to male body dissatisfaction. Perhaps men at a developmental different stage of life, would not be as impacted by the sociocultural
standard and internalize the lean and muscular ideal to the same degree. Finally, longitudinal examinations and alternative model testing to test causal patterns are warranted.

Despite the limitation, this study extends the literature and provides several contributions to the field of body image research. I found that male body dissatisfaction consists of two separate but related pathways that predict unique outcomes and that body dissatisfaction mediates the relations between internalization of the sociocultural male idea and negative outcomes. Specifically, this study revealed that body fat dissatisfaction is more strongly related to eating pathology whereas muscle dissatisfaction is more strongly related to physical activity dependence. Both body fat dissatisfaction and muscle dissatisfaction were related to depression among this male sample. These findings provide important information for the conceptualization of male body image concerns that can be used in providing accurate assessment and appropriate interventions for male clients.
REFERENCES


Disorders, 26, 65-72. doi:10.1002/(SICI)1098-108X(199907)26:1<65::AID-EAT8>3.0.CO;2-D


APPENDIX A

SURVEY
Demographic Items

1. Age: __________
2. Sex: male______ female_______
3. Sexual orientation:
   Heterosexual: __________
   Homosexual: __________
   Bisexual: __________
3. Height: __________
4. Weight: __________
5. Race/Ethnicity (check all that apply):
   White (not of Hispanic origin) __________
   Black or African American __________
   Asian ______________________________
   American Indian or Alaskan native ______
   Native Hawaiian or Pacific Islander ______
   Hispanic ______________________________
   Some other race (specify) __________
6. Year in school (freshman, sophomore, etc.): ______
7. Major: _______________________________
Male Body Attitudes Scale (Tylka et al., 2005)
Below are a series of statements about how people may think, feel and behave. You are asked to indicate the extent to which each statement pertains to you personally. Your answers to the items are anonymous; there are not right or wrong answers so try very hard to be completely honest in your answers.

Using the scale below, indicate your answer by entering the corresponding number to the left of the statement.

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<tbody>
<tr>
<td></td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Usually</td>
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1. I think I have too little muscle on my body.
2. I think my body should be leaner.
3. I wish my arms were stronger.
4. I feel satisfied with the definition of my abs (i.e. stomach muscles).
5. I think my legs are not muscular enough.
6. I think my chest should be broader.
7. I think my shoulders are too large.
8. I am concerned that my stomach is too flabby.
9. I think my arms should be larger (i.e. more muscular).
10. I am dissatisfied with my overall body build.
11. I think my calves should be larger (i.e. more muscular).
12. I wish I were taller.
13. I think I have too much fat on my body.
14. I think my abs are not thin enough.
15. I think my back should be larger and more defined.

(Please continue to next page)
16. I think my chest should be larger and more defined.

17. I feel satisfied with definition of my arms.

18. I feel satisfied with the size and shape of my body.

19. I am satisfied with my height.

20. Has eating sweets, cakes or other high calorie food made you feel fat or weak?

21. Have you felt excessively large and rounded (i.e. fat)?

22. Have you felt ashamed of your body size or shape?

23. Has seeing your reflection (e.g., in a mirror or window) made you feel badly about your size or shape?

24. Have you been so worried about your body size or shape that you have been feeling that you out to diet?

(Please continue to next page)
**EDI- Drive for Thinness (Garner et al., 1983)**

Using the scale below, indicate your answer by entering the corresponding number to the left of the statement. Also, put a check mark next to the one that is most distressing to you.

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- ______ 1. I eat sweets and carbohydrates without feeling nervous.
- ______ 2. I think about dieting.
- ______ 3. I feel extremely guilty after overeating.
- ______ 4. I am terrified of gaining weight.
- ______ 5. I exaggerate or magnify the importance of weight.
- ______ 6. I am preoccupied with the desire to be leaner.
- ______ 7. If I gain a pound, I worry that I will keep gaining.

(Please continue to next page)
**EDI- Bulimia (Garner et al., 1983)**
Using the scale below, indicate your answer by entering the corresponding number to the left of the statement. Also, put a check mark next to the one that is most distressing to you.

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- ______ 1. I eat when I am upset.
- ______ 2. I stuff myself with food.
- ______ 3. I have gone on eating binges where I have felt that I could not stop.
- ______ 4. I think about bingeing (overeating).
- ______ 5. I eat moderately in front of others and stuff myself when they are gone.
- ______ 6. I have the thought of trying to vomit in order to lose weight.
- ______ 7. I eat or drink in secrecy.

(Please continue to next page)
Sociocultural Attitudes Towards Appearance Scale (Heinberg et al., 1995)
Using the scale below, indicate your answer by entering the corresponding number to the left of the statement.

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<tbody>
<tr>
<td>Completely Disagree</td>
<td>Neither Agree nor disagree</td>
<td>Completely Agree</td>
<td></td>
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</table>

______ 1. Men who appear in TV shows and movies project the type of appearance I see as my goal.

______ 2. I believe that clothes look better on muscular models.

______ 3. I believe that clothes look better on lean models.

______ 4. Music videos that show muscular men make me wish I were muscular.

______ 5. Music videos that show lean men make me wish I were lean.

______ 6. I do not wish to look like the models in magazines.

______ 5. I tend to compare my body to people in magazines and on TV.

______ 6. Photographs of muscular men make me wish I were muscular.

______ 7. Photographs of lean men make me wish I were lean.

______ 8. I wish I looked like a body builder.

______ 9. I wish I looked like a runner.

______ 10. I often read magazines like Mens' Fitness and Muscle & Fitness and compare my appearance to the models.

(Please continue to next page)
**Exercise Dependence Scale (Hausenblaus & Symons Downs, 2002)**

Using the scale below, indicate your answer by entering the corresponding number to the left of the statement.

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</tbody>
</table>

1. I continually increase my exercise duration to achieve the desired effect/benefits.
2. I exercise to avoid feeling anxious.
3. I exercise despite persistent physical problems.
4. I am unable to reduce how often I exercise.
5. I think about exercise when I should be concentrating on school/work.
6. I spend most of my free time exercising.
7. I exercise longer than I plan.

(Please continue to next page)
Weight Lifting Dependence Scale
Using the scale below, indicate your answer by entering the corresponding number to the left of the statement.

1 2 3 4 5 6

Never Always

_____ 1. I continually increase my weight lifting duration to achieve the desired effect/benefits.

_____ 2. I weight lift to avoid feeling anxious.

_____ 3. I weight lift despite persistent physical problems.

_____ 4. I am unable to reduce how often I weight lift.

_____ 5. I think about weight lifting when I should be concentrating on school/work.

_____ 6. I spend most of my free time weight lifting.

_____ 7. I weight lift longer than I plan.

(Please continue to next page)
**CES – Depression (Radloff, 1977)**

Using the scale below, indicate your answer by entering the corresponding number to the left of the statement. How often have you felt this way during the past week?

<table>
<thead>
<tr>
<th>Rarely or None of the time</th>
<th>Some or a little of the time</th>
<th>Occasionally or a moderate amount of the time</th>
<th>Most or all of the time</th>
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_____ 1. I was bothered by things that usually don’t bother me.

_____ 2. I did not like eating; my appetite was poor.

_____ 3. I felt that I could not shake off the blues even with the help from my family or friends.

_____ 4. I felt that I was just as good as other people.

_____ 5. I had trouble keeping my mind on what I was doing.

_____ 6. I felt depressed.

_____ 7. I felt that everything I did was an effort.

_____ 8. I felt hopeful about the future.

_____ 9. I thought my life had been a failure.

_____ 10. I felt fearful.

_____ 11. My sleep was restless.

_____ 12. I was happy.

_____ 13. I talked less than usual.


_____ 15. People were unfriendly.

_____ 16. I enjoyed life.

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### Depression Scale

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<tr>
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<td>Some or a little of the time</td>
<td>Occasionally or a moderate amount of the time</td>
<td>Most or all of the time</td>
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</table>

17. I had crying spells.
18. I felt sad.
19. I felt that people dislike me.
20. I could not get going.

You have completed the study. Thank you for your participation.
January 23, 2012

Dear Potential Research Participant:

I am a doctoral student in Counseling and Counseling Psychology in the School of Letters and Sciences at Arizona State University working under the supervision of Professor Terence J.G. Tracey, Ph.D.

I am conducting a research study to examine the relations between U.S cultural standards of the ideal male body image, body dissatisfaction and outcomes of body dissatisfaction among males. I am inviting your participation, which will involve filling out a survey on how you think about culture and about your body. This survey should take approximately 10-15 minutes to complete.

Your participation in this study is voluntary. You can skip questions if you wish. If you choose not to participate or to withdraw from the study at any time, there will be no penalty, nor will it affect your grade in anyway. You must be 18 years or older to participate.

Your instructor may choose to give extra credit for participating in this survey; however, extra credit is up to the instructor’s discretion and will in no way be linked to your responses. While, there may be no direct benefits to you, the possible benefits of your participation are adding to our knowledge base with eventual impact on designing interventions to assist people improve their quality of life. There are no foreseeable risks or discomforts to your participation.

Your responses will be anonymous because you do not have to identify yourself. The results of this study may be used in reports, presentations, or publications but your name will not be known. If applicable, results will only be shared in the aggregate form.

If you have any questions concerning the research study, please contact the research team at: Terence Tracey at 446 Payne Hall, 480-965-6159. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Research Compliance Office, at (480) 965-6788.

Return of the questionnaire will be considered your consent to participate.

Sincerely,

Elizabeth Poloskov, M.Ed. 
Doctoral Student 
Counseling Psychology 
Arizona State University

Terence J.G. Tracey, Ph.D. 
Professor and Program Leader 
Counseling and Counseling Psychology 
Arizona State University
APPENDIX C

IRB APPROVAL
To: Terence Tracey  
EDB

From: Mark Roosa, Chair  
Soc Beh IRB

Date: 10/10/2011

Committee Action: Exemption Granted

IRB Action Date: 10/10/2011

IRB Protocol #: 1109006918

Study Title: The Unique Experience of Body Dissatisfaction in Males: Accurate Assessment and Outcomes

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2).

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects’ financial standing, employability, or reputation.

You should retain a copy of this letter for your records.